Virginia Office of Emergency Medical Services

Virginia Statewide Trauma Center Designation Program
Hospital Resource Manual

Virginia Department of Health
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TABLE OF CONTENTS

PREFACE

The purpose of the Trauma Center Resource Manual is to provide information to hospital physicians, nurses, and administrators about Trauma Center Designation in Virginia. The manual contains the criteria and standards effective January, 2006, for the three levels of Trauma Center designation in Virginia. The process documents explain how trauma center designation is acquired and maintained.

Virginia Trauma Center standards are based upon national standards put forth by the American College of Surgeons and the American College of Emergency Physicians. The Virginia standards are reviewed and updated based on changes in the national standards as well as the evolving needs of the Trauma System in Virginia.

The Trauma System Oversight & Management Committee (formerly the Critical Care Committee) document explains the role of the Committee in oversight of the trauma center designation program. The Committee meets quarterly to discuss trauma system issues, and to prepare action items for the State Emergency Medical Services Advisory Board. Hospital representatives are welcome to attend these meetings.

Please direct questions or requests for further information or resources to the Trauma/Critical Care Coordinator, Office of EMS, 109 Governor Street,
Suite UB 55, Richmond, Virginia 23219. (804) 864-7600.

VIRGINIA TRAUMA CENTER DESIGNATION

Resource Document: *Virginia Statewide Trauma Center Designation Program,* available at: www.vdh.virginia.gov/oems. This is based on *Resources for Optimal Care of the Injured Patient: 1999*, Committee on Trauma, American College of Surgeons.

The Trauma System Oversight & Management Committee (Committee) of the State Emergency Medical Services Advisory Board (Advisory Board) has been asked by the State Health Commissioner to assist in the designation of trauma centers in the Commonwealth of Virginia. The Commissioner shares the belief that designating trauma centers will improve trauma care at all phases of the patient care system, from prehospital through rehabilitation.

The process of designation is entirely voluntary on the part of the hospitals in the state. It is meant to identify those hospitals that will make a commitment to provide a given level of care for the multiple injured patient and who welcome public acknowledgment of that capability. Knowledge of trauma care capabilities, with improved field categorization and prehospital capabilities will help all those involved in the trauma care delivery system make decisions that are in the best interest of the patient.

The State Board of Health has adopted the resource document listed above. The designation process is as follows:

1. Each hospital that desires consideration for designation will make a request, to the Virginia Department of Health, Office of EMS, Trauma/Critical Care Coordinator. The request, with statement of community need or justification, for designation will be included in this document and the impact on its regional trauma system.

2. A copy of the resource document for the designation, self-assessment checklist and questionnaire will be submitted to the Office of EMS, Trauma/Critical Care Coordinator.

3. The application for designation should include the hospital name, parent company, chairperson of the board of directors, CEO, nurse executive, administrator in charge of the trauma program, trauma medical director, trauma nurse coordinator and emergency department medical director.

4. The Trauma/Critical Care Coordinator will review the application with the Chairman of the TSO&MC Committee, (and Committee member(s), if necessary), for compliance with the required standards. Additional clarifying documents or information may be requested.

5. A designation site review will only be scheduled after a hospital can demonstrate: presence of essential criteria; compliance with the Virginia Statewide Trauma Registry data submission requirement, **and** participation in regional trauma triage plan.

   A site review will be scheduled for the purpose of awarding provisional status as a trauma center. Upon completion of one year as a provisional trauma center the hospital will be required to submit an interim report describing any changes since designation as a provisional center.

A modified site review team, consisting of a surgeon team leader and a trauma/critical care RN, will review the hospital and if there are no critical deficiencies identified at the time of this visit, the center will be designated as a trauma center. A verification visit will be required three years from the original full site review or two years from the modified site review.

6. Once the hospital complies with the required standards, the hospital will be notified and arrangements will be made for an on-site visit by a multidisciplinary team composed of the following:

LEVEL I

- Out of State Trauma Surgeon
- In State Trauma Surgeon/Team Leader
- A Trauma/Critical Care Nurse
- Emergency Department Physician
- Hospital Administrator

LEVEL II and III

- In State Trauma Surgeon/Team Leader
- Emergency Department Physician
- A Trauma/Critical Care Nurse
- Hospital Administrator

7. The site review will be scheduled within six months of receiving a completed application. Once the site review date is scheduled, the hospital will receive an agenda, time schedule and a list of documents and personnel that need to be available at the time of the visit.

8. At the conclusion of the scheduled site visit, the site review team members will submit their findings and recommendations to the Surgeon/Team Leader, who then prepares a summary report and recommendations, which will be presented to hospital administration.

9. Acting upon the recommendation of the site review team the State Health Commissioner designates the Trauma Center for a period of two (2) years from the date of notification. The facility will receive a final report of the site review team findings and recommendations in accordance with the criteria. In the event that the hospital disagrees with the report to the Commissioner, the hospital may choose to initiate an appeals process, outlined elsewhere in this document.

10. An on-site verification visit will be scheduled within twenty-four (24) months of the Original official designation.

VIRGINIA TRAUMA CENTER VERIFICATION

Resource Document: *Virginia Statewide Trauma Center Designation Program,* available at: www.vdh.virginia.gov/oems. This is based on *Resources for Optimal Care of the Injured Patient: 1999*, Committee on Trauma, American College of Surgeons.

The State EMS Advisory Board has adopted the resource document listed above. The verification process is as follows:

1. The following materials/documents will be required for review:

    a. Trauma data on all patients treated and transferred, admitted and those patients who expired within the emergency department.

    b. Access to the Trauma Registry and medical records of injured patients.

    c. Minutes of multi-disciplinary trauma conference, morbidity and mortality conference, trauma death audits.

    d. Documentation to reflect the fulfillment of educational requirements considered essential as reflected throughout this document.

    e. Documentation of CME's, as indicated.

    f. Credential files documenting compliance with hospital bylaws for medical staff privileges.

    g. Organizational Chart.

    h. Other documents as requested.

2. The Site Review Team will be composed of a trauma surgeon/team leader, an emergency medicine physician, a trauma/critical care nurse and a hospital administrator.
    a. Verification of level I & II Centers shall have an out of state surgeon/ consultant review the application package prior to the site visit. The out of state consultant will make recommendations, based on the application packet and submit these findings to the site review team and the facility. These recommendations should be made available to the team and hospital no later than two weeks prior to the scheduled visit.

3. Site Visit day will occur as follows:

    a. Conference with the key trauma individuals of the institution and the Site Review Team. The key individuals are: the Trauma Program Director, Trauma Nurse Coordinator, Medical Director of Trauma, Medical Director of Emergency Medicine, Hospital Administrator that is the

immediate supervisor of the trauma program, Trauma Nurse Clinicians, Nurse Managers of ED, OR, ICU's, Pediatrics and trauma floors, Trauma Registrar, PI Coordinator, Orthopedic, Neurosurgery, Anesthesia, Rehabilitation Medicine, Radiological and lab/blood blank representatives, Local EMS Chief's and OMD's

b. Tour of facility at the discretion of the Site Review Team. All efforts should be made to minimize duplication of hospital areas.

c. Review of ED charts and hospital trauma charts (open or closed) as selected by the review team.

d. Review of Performance Improvement (PI) documents.

e. Exit interview with Trauma Medical Director, Trauma Program Director, Trauma Nurse Coordinator and Hospital Administrator with direct responsibility for the Trauma Program, CEO and Nursing Executive if desired.

5. At the conclusion of the scheduled site visit, the site review team members will submit their findings and recommendations to the Surgeon Team Leader who then prepares a summary report and recommendations, which will be presented to hospital administration.

6. Acting upon the recommendation of the Site Review Team the Commissioner verifies the designation of the Trauma Center for a three-year period from the date of notification.

7. If a Trauma Center fails to meet essential criteria identified during a site visit or by other compelling evidence, the hospital will receive written notification by the Trauma System Oversight & Management Committee of the State EMS Advisory Board. The Committee will also notify the Office of EMS. This notification will include an outline of the essential criteria not met and the time frame that is given to correct the deficiencies.

The hospital Trauma Center will submit a written plan of correction within 30 days after notification. The hospital Trauma Center has six months from the date of this notification to correct all deficiencies, and undergo a focused repeat verification visit performed by the Team Leader only, from the initial visit. The Team Leader may also deem a repeat visit unnecessary with appropriate documentation that the deficiency has been corrected.

If essential criteria are met, the Committee will notify the same above agencies that the hospital is functioning within the stated criteria for that level of designation. If the deficiencies are not corrected within the six month period, the Trauma Center designation will be withdrawn by the Commissioner of Health. If the facility desires designation as a trauma center, it must wait a minimum of six months and reapply.

Trauma Center Criteria

The items listed below as "E" are essential items (required) in order maintain the respective level (I, II, or III) trauma center designation. Those items listed with an "O" are items that are considered Optimal and are non-essential (not required). Optimal items would show the facility's commitment above the essential criteria for Level I, II or III designation.

	Levels		
I. Institutional Organization	**I**	**II**	**III**
A. Trauma Program:			
1. Mission statement emphasizing continuous performance improvement in the management of the trauma patient.	**E**	**E**	**E**
2. A recognizable program within the hospital which has a surgeon as its director/coordinator/physician in charge.	**E**	**E**	**E**
3. Support of the facilities' Board of Directors. (Board of Directors should be notified of applications for trauma designation, verification and approval of the Commissioner of Health after a site review).	**E**	**E**	**E**
4. Administration supportive of Trauma Program.	**E**	**E**	**E**
5. Evidence of an annual budget for Trauma Program.	**E**	**E**	**E**
B. Trauma Services:			
1. Trauma Program Medical Director:			
a. Board certified/eligible general surgeon. May have emergency medicine physician as Co-Director.	**E**	**E**	**E**
b. Minimum three years experience on trauma service or trauma fellowship training.	**E**	**O**	**O**
c. Participates in regional and national trauma organizations.	**E**	**O**	**O**
d. Involved in trauma research and includes the publication of results and presentations.	**E**	**O**	**O**
e. Actively involved in providing care to patients with life threatening or urgent injuries to discharge.	**E**	**E**	**E**
f. Oversees all aspects of multidisciplinary care from the time of injury to discharge.	**E**	**E**	**E**
g. Current ATLS provider or instructor.	**E**	**E**	**E**
h. Will have 30 hours of category I trauma/critical care CME every three years and attend one national meeting whose focus is trauma or critical care.	**E**	**E**	**O**
i. Will have 30 hours of category I trauma/critical care CME every three years and/or attend one national meeting whose focus is trauma or critical care.	**-**	**-**	**E**
j. Attends more than one national meeting over three year period.	**O**	**O**	**O**

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	Levels		
I. Institutional Organization (Cont'd)	**I**	**II**	**III**
k. The Trauma Program Medical Director will provide an annual meeting and/or a self learning packet/web based learning program. All of the following shall receive this training: • All full and part time surgeons taking trauma call. • The Trauma Program Manager/Trauma Coordinator. • Nurse practitioners and physicians assistants affiliated with the trauma program. • All full and part time emergency department physicians who may be caring for trauma alert patients in the Emergency Department. • All nurse practitioners and physicians assistants who may be caring for trauma alert patients in the emergency department. The Trauma Program Medical Director will provide the following updates during this meeting: i. Highlights from national meetings and other continuing education to include a discussion of any changes applicable to the current guidelines and practice. ii. A review, including updated information from ATLS. **OR** Each surgeon, emergency physician, nurse practitioner or physicians assistant participating/taking call in the service or could possibly be caring for trauma alert patients in the emergency department must complete 30 Category I CME's in trauma/critical care across the three year verification period or 20 across the two year designation period. Updating ATLS may be included in these CME's *The facility must choose between providing an annual update or CME tract to educate physician staff.	**E**	**E**	**E**
2. Trauma Nurse Coordinator/Trauma Program Manager:			
a. Must have dedicated full time TNC/TPM.	**E**	**E**	**O**
b. Must have a TNC/TPM, may be a part-time position, though the trauma program shall be a major focus of their job description.	**-**	**-**	**E**
c. An identified TNC/TPM with overall management responsibilities for the trauma program.	**E**	**E**	**O**
d. Defined job description and organizational chart delineating the TNC/TPM role and responsibilities.	**E**	**E**	**E**
e. Must be a Registered Nurse.	**E**	**E**	**E**
f. The TNC/TPM, in addition to being a Registered Nurse, must possess experience in Emergency/Critical Care Nursing.	**E**	**E**	**O**

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	Levels		
2. Trauma Nurse Coordinator/Trauma Program Manager: (Cont'd)	**I**	**II**	**III**
g. 30 CEU's/contact hours required per three year verification cycle, of which 50%, must be via an extramural source.	**E**	**E**	**O**
h. The TNC/TPM will attend one national meeting within the three year verification or two year initial designation period.	**E**	**E**	**E**
i. In addition to the national meeting in, I.B.2.h, attends other national meetings within the three year verification or two year designation.	**O**	**O**	**O**
3. Trauma Registrar:			
a. Must be a minimum of one full FTE dedicated to the Trauma Registry.	**E**	**E**	**O**
b. A minimum of a part time trauma registrar.	**-**	**-**	**E**
c. Trauma registrars must attend 24 hours registry or trauma critical care contact hours/education hours over three years.	**E**	**E**	**O**
C. Trauma Team:			
1. Trauma Team Response:			
a. There must be a clearly delineated trauma team response to the arrival of the patient with suspected or known major trauma in the Emergency Department 24 hours a day.	**E**	**E**	**E**
2. Trauma Surgeon:			
a. A trauma surgeon must meet the patient in the ED upon arrival. A PGY4 or PGY5 general surgery resident capable of assessing emergent situations, providing control and leadership of the care of the trauma patient may meet this requirement. In the event that this requirement is provided by a resident, the trauma surgeon must be available in a timely manner.	**E**	**E**	**O**
b. The emergency physician is a designated member of the trauma team and may direct resuscitation and care of the patient until the arrival of the Trauma Team Leader. A senior level emergency medicine resident may fulfill this function provided there is an attending emergency medicine physician present in the ED.	**E**	**E**	**E**
c. Trauma/general surgeons participating in the trauma program and taking active call must be dedicated to the facility while on trauma call and show active participation in the trauma program.	**E**	**E**	**E**
d. Trauma/general surgeons participating in the trauma program and taking active call must have completed ATLS, successfully, at least once in the past.	**E**	**E**	**E**

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	Levels		
Trauma Team: (Cont'd)	**I**	**II**	**III**
3. Trauma Related Surgical Specialties: Promptly available as needed	**E**	**E**	**E**
4. Anesthesiology:			
a. Anesthesiologist in hospital 24 hours a day. (refer to page 13 Sec. II.D.1)	**E**	**O**	**O**
b. Anesthesiology must be on call and readily available 24 hours a day. (refer to page 13 Sec. II.D.2)	**-**	**E**	**E**
c. Anesthesiologist must be present for all emergent operative procedures on major trauma patients. (refer to page 13 Sec. II.D.3)	**E**	**E**	**E**
5. Minimum Physician Coverage:			
a. A minimum of two attending level physicians must be present for the arrival of full trauma team alert patients. These physicians must be an anesthesiologist, EM physician, or general surgeon. A qualified general surgeon is expected to participate in major therapeutic decisions and be present in the emergency department for major resuscitations and at operative procedures in all seriously injured patients. (* see administrative guidelines.)	**E**	**E**	**O**
b. A minimum of one attending level physician must be present for the arrival of trauma team alert patients. This physician must have the capability to manage the initial care of the majority of injured patients and have the ability to transfer patients that exceed their resources to an appropriate level trauma center. (* see administrative guidelines)	**-**	**-**	**E**
II. Hospital Departments/Divisions/Sections:			
A. General Surgery:			
1. Clinical capabilities in general surgery with two separate posted call schedules. One for trauma, one for general surgery. In those instances where a physician may simultaneously be listed on both schedules, there must be a defined back-up surgeon listed on the schedule to allow the trauma surgeon to provide care for the trauma patient. The trauma service director shall specify, in writing, the specific credentials that each back-up surgeon must have. These, at a minimum, must state that the back-up surgeon has surgical privileges at the trauma center and is boarded or eligible in general surgery (with board certification in general surgery within five years of completing residency). **In house 24 hours a day**. A PGY4 or PGY5 capable of assessing emergent situations in their respective specialties may fulfill this requirement. They must be capable of providing surgical treatment immediately and provide control and leadership of the care of the trauma patient.)	**E**	**O**	**O**

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	Levels		
A. General Surgery: (Cont'd)	**I**	**II**	**III**
2. Clinical capabilities in general surgery with two separate posted call schedules. One for trauma, one for general surgery. In those instances where a physician may simultaneously be listed on both schedules, there must be a defined back-up surgeon listed on the schedule to allow the trauma surgeon to provide care for the trauma patient. The trauma program director shall specify, in writing, the specific credentials that each back-up surgeon must have. These, at a minimum, must state that the back-up surgeon has surgical privileges at the trauma center and is boarded or eligible in general surgery (with board certification in general surgery within five years of completing residency). **On Call**. Trauma surgeon or PGY4/ PGY5 capable of assessing emergent situations in their respective specialties may fulfill this requirement. They must be capable of providing surgical treatment immediately and provide control and leadership of the care of the trauma patient.) (* see administrative guidelines for possible exception)	-	**E**	**E***
3. When the trauma surgeon is not in house, the trauma surgeon should be present in the Emergency Department at the time of arrival of the patient. When sufficient prior notification has not been possible, an emergency department physician will immediately initiate the evaluation and resuscitation. Definitive surgical care must be instituted by the trauma surgeon in a timely fashion.	-	**E**	**E**
4. The hospital shall establish a policy detailing the expected amount of time for the trauma surgeon to arrive from notification to arrival, this time shall not exceed 30 minutes. Selection of the interval will be based on patient outcome data.	**E**	**E**	**E**
B. Neurological Surgery:			
1. An attending neurosurgeon must be promptly available. The in-house requirement may be fulfilled by an in-house neurosurgery resident, or a surgeon/designee who has special competence, as judged by the Chief of Neurosurgery, in the care of patients with neural trauma, and who is capable of initiating diagnostic procedures.	**E**	**O**	**O**
2. An attending neurosurgeon must be promptly available. This requirement may be fulfilled by a neurosurgery resident, or a surgeon/designee who has special competence, as judged by the Chief of Neurosurgery, in the care of patients with neural trauma, and who is capable of initiating diagnostic procedures. This may be on-call from out side of the hospital.	-	**E**	**O**

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	Levels		
B. Neurological Surgery: (cont'd)	**I**	**II**	**III**
3. If a neurosurgeon is responsible for more than one facility at the same time, they must have a back up schedule.	**E**	**E**	**O**
4. If an attending neurosurgeon is not dedicated to the Level II Trauma Center, the center must have a back up call list **OR** the center must demonstrate no more than 24 emergency neurosurgical procedures per year AND the center must provide a neuro-trauma diversion plan.	**-**	**E**	**-**
C. Emergency Medicine:			
1. The emergency department physician must be a recognized member of the trauma team. and be represented on the facilities trauma committee.	**E**	**E**	**E**
2. The Emergency Medical Director or their designee will have 30 hrs of category I CME every three years and attend one national meeting with some content in trauma or critical care.	**E**	**E**	**E**
3. The Emergency Medical Director or designee will maintain a current ATLS instructor or participant certification. .	**E**	**E**	**E**
D. Anesthesiology:			
1. Anesthesiologist in hospital 24 hours a day. (Requirements may be filled by anesthesia residents, CRNA's capable of assessing emergent situations in trauma patients and providing any indicated treatment. Anesthesia personnel should be capable of providing anesthesia service for surgical trauma cases including major vascular, neurosurgical, pediatric, orthopedic, thoracic, ENT and other in-house surgical cases. If residents or CRNA's are used, a staff anesthesiologist must be present in the OR suite during surgery. Training and experience in both invasive and non-invasive monitoring is essential).	**E**	**O**	**O**
2. Anesthesiology. (anesthesia personnel need not be in house 24 hours a day, but the trauma service should ensure that anesthesia personnel can be present in the emergency room at the time of arrival of the trauma alert patient. When sufficient prior notification has not been made possible, a designated member of the trauma team will immediately initiate the evaluation and resuscitation. Requirements must be filled by anesthesia personnel capable of assessing emergent situations in trauma patients and providing any indicated treatment. Anesthesia personnel should be capable of providing anesthesia Service for surgical trauma cases including major vascular,	**-**	**E**	**O**

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	Levels		
D. Anesthesiology: (Cont'd)	**I**	**II**	**III**
2. neurosurgical, pediatric, orthopedic, thoracic, ENT and other in-house surgical sub-specialties involved in trauma cases. If residents or CRNA's are used, a staff anesthesiologist must be present in the OR suite during surgery. Training and experience in both invasive and non-invasive monitoring are essential).	-	**E**	**O**
3. Anesthesiology. On call and promptly available from in or out of hospital. (Requirements must be filled by anesthesia personnel capable of assessing emergent situations in trauma patients and providing any indicated treatment. Anesthesia personnel should be capable of providing anesthesia service for surgical trauma cases including major vascular, neurosurgical, pediatric, orthopedic, thoracic, ENT and other in-house surgical sub-specialties involved in trauma cases. If residents or CRNA's are used, a staff anesthesiologist must be present in the OR suite during surgery. Training and experience in both invasive and non-invasive monitoring is essential).	-	-	**E**
III. Additional Clinical Capabilities: (On call and promptly available)			
A. Surgical:			
1. Cardiac Surgery	**E**	**O**	**O**
2. Thoracic Surgery	**E**	**E**	**O**
3. Orthopedic Surgery	**E**	**E**	**E**
4. Pediatric Surgery	**E**	**O**	**O**
5. Hand Surgery	**E**	**O**	**O**
6. Microvascular/Replant Surgery	**E**	**O**	-
7. Plastic Surgery	**E**	**E**	**O**
8. Maxillofacial Surgery	**E**	**E**	**O**
9. Ear, Nose & Throat Surgery	**E**	**E**	**O**
10. Oral Surgery	**E**	**O**	**O**
11. Ophthalmic Surgery	**E**	**E**	**O**
12. Gynecological Surgery/Obstetrical Surgery	**E**	**E**	**O**

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	Levels		
III. Additional Clinical Capabilities: (Cont'd)	**I**	**II**	**III**
B. Non-surgical: (On call and promptly available**)**			
1. Cardiology	**E**	**E**	**O**
2. Pulmonology	**E**	**O**	**O**
3. Gastroenterology	**E**	**O**	**O**
4. Hematology	**E**	**O**	**O**
5. Infectious Disease	**E**	**O**	**O**
6. Internal Medicine	**E**	**E**	**E**
7. Nephrology	**E**	**O**	**O**
8. Pathology	**E**	**E**	**E**
9. Pediatrics	**E**	**O**	**O**
10. Radiology	**E**	**E**	**E**
11. Interventional Radiology.	**E**	**O**	**O**
IV. Clinical Qualifications:			
A. General/Trauma Surgeon's:			
1. Board certified/eligible in general surgery.	**E**	**E**	**E**
2. Must meet the educational requirements in I.B.1.k.	**E**	**E**	**E**
3. Successful ATLS Course completion at least once.	**E**	**E**	**E**
B. Emergency Medicine:			
1. Board certified/eligible in emergency medicine (Exceptions may be made in rare instances based upon long term practice in emergency medicine).	**E**	**E**	**E**
2. Must meet the educational requirements in I.B.1.k.	**E**	**E**	**E**
3. Emergency department physicians must maintain current ATLS, **if not** boarded in emergency medicine.	**E**	**E**	**E**
C. Neurosurgery:			
1. Board certified within five years of completing residency successfully	**E**	**E**	**O**
2. 10 hours of CME per year in neuro trauma.	**O**	**O**	**O**
3. Must have successfully completed an ATLS course once.	**O**	**O**	**O**
D. Orthopedic Surgery:			
1. Board certified within five years of completing residency successfully.	**E**	**E**	**O**
2. 10 hours of CME per year in skeletal trauma.	**O**	**O**	**O**
3. Must have successfully completed an ATLS course once.	**O**	**O**	**O**

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	Levels		
IV. Clinical Qualifications: (Cont'd)	**I**	**II**	**III**
E. Trauma Nursing:			
1. All ED, OR, ICU, PACU and acute care unit staff that consistently care for the severely injured patient will receive annual update information provided by the TNC/TPM. This education may be provided by the representative/designee from each area listed here. The annual update information must include: i. Highlights from national meetings. ii. Updates to TNCC, ATCN, CATN, ENPC and other continuing education. **OR** All nursing staff who participate in the trauma team response, or who primarily care for the injured patient in the ICU, OR, PACU, ED or surgical trauma units shall have a minimum eight hours trauma/critical care CME annually. This requirement may be filled by successfully completing TNCC, ATCN, CATN, ENPC. *The facility must choose between providing an annual update or CME tract to educate nursing staff.	**E**	**E**	**E**
2. All nursing staff caring for trauma patients have documented knowledge and skill in trauma nursing (trauma specific orientation, skills checklist).	**E**	**E**	**E**
3. Documentation of specific orientation and continuing education for pediatric and burn care if these patients are regularly admitted to the trauma center.	**E**	**E**	**E**
4. >50% of Level III nursing staff who participate in the trauma team response must successfully complete a TNCC, ATCN course or participate in a resuscitation/assessment skill based educational program involving the Level I or II trauma program manager within one year of beginning trauma team responsibilities	**-**	**-**	**E**
V. Facilities/Resources/Capabilities:			
A. Emergency Department:			
1. Personnel:			
a. Designated physician director/chairman (see clinical qualifications under Section II.C	**E**	**E**	**E**
b. 24 hour per day staffing by physicians physically present in the emergency department that meet the standard in Section IV. B	**E**	**E**	**E**
c. RN's, LPN/LVN's and nursing assistants/technicians in adequate numbers in the initial resuscitation area based on acuity and trauma team composition.	**E**	**E**	**E**
d. A minimum of two RN's per shift functioning in the trauma resuscitation area that possess trauma nursing training.	**E**	**E**	**E**

Trauma Center Criteria

The items listed below as "E" are essential items (required) in order maintain the respective level (I, II, or III) trauma center designation. Those items listed with an "O" are items that are considered Optimal and are non-essential (not required). Optimal items would show the facility's commitment above the essential criteria for Level I, II or III designation.

	Levels		
A. Emergency Department:	**I**	**II**	**III**
1. Personnel: (Cont'd)			
e. A written provision/plan for the acquisition of additional staffing on a 24 hour basis to support units with increased patient acuity, multiple emergency procedures and admissions.	**E**	**E**	**E**
f. Each nursing unit must have a copy of their staffing plan for review during the site visit.	**E**	**E**	**E**
g. A written protocol for the expectations and responsibilities of the trauma nurse and other team members during trauma resuscitations.	**E**	**E**	**E**
h. Nursing documentation for trauma patients is on a trauma flow sheet or electronic medical record equivalent.	**E**	**E**	**E**
2. Emergency Department Resuscitation Equipment:			
a. For trauma centers caring for pediatric patients, there shall be equipment corresponding to the adult equipment, appropriate to age and size. There shall be information on pediatric medication dosing with this equipment.	**E**	**E**	**E**
b. Broselow Tape	**E**	**E**	**E**
c. Airway control & ventilation equipment (laryngoscopes with a variety of straight and curved blades, endotracheal tubes of all sizes, bag valve masks and methods to continually provide supplemental Oxygen)	**E**	**E**	**E**
d. Suction devices in adequate numbers to be able to care for the multi system trauma patient.	**E**	**E**	**E**
e. End Tidal CO2 detector to confirm tracheal placement of ETT.	**E**	**E**	**E**
f. Bedside monitor with central monitoring capabilities to include: ECG, Pulse Oximetry, central venous pressure monitoring.	**E**	**E**	**E**
g. Cardiac Monitor immediately available with capabilities to include: ECG, Pacing, external & internal defibrillation.	**E**	**E**	**E**
h. Intravenous fluids and administration devices to include large bore access and intraosseous devices (adult & pediatric)	**E**	**E**	**E**
i. Thermal control equipment for warming blood & IV fluid.	**E**	**E**	**E**
j. Method of rapid IV fluid administration, must be able to infuse warmed IV fluid and warmed blood.	**E**	**E**	**E**
k. Arterial Catheters.	**E**	**E**	**O**
l. Sterile surgical sets/trays to include: airway control/cricothyrotomy, thoracotomy, vascular access, chest tube insertion, peritoneal lavage and central line access.	**E**	**E**	**E**
m. Thermal control equipment for cooling/warming patients.	**E**	**E**	**E**
n. Gastric catheters.	**E**	**E**	**E**

Trauma Center Criteria

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	Levels		
2. Emergency Department Resuscitation Equipment: (Cont'd)	**I**	**II**	**III**
o. Skeletal traction devices.	**E**	**E**	**E**
p. Skeletal traction device for providing cervical traction.	**E**	**E**	**E**
q. 24 hour per day x-ray capability.	**E**	**E**	**E**
r. Sonography (FAST capability).	**O**	**O**	**O**
s. Doppler capability.	**E**	**E**	**E**
t. Two way radio communication linked with EMS transport units.	**E**	**E**	**E**
B. Operating Suite:			
1. Immediately available 24 hours per day.	**E**	**E**	**O**
2. Personnel:			
a. 24 hour per day immediate availability of in-house staffing.	**E**	**E**	**O**
b. Personnel available 24 hours per day in-house or on-call and available in a timely manner.	**-**	**-**	**E**
c. Operating room adequately staffed in-house 24 hours per day. There should be a second on-call team promptly available when the in-house team is participating in an operative case.	**E**	**E**	**O**
3. Operating Room Resuscitation Equipment:			
a. For trauma centers caring for pediatric patients, there shall be equipment corresponding to the adult equipment, appropriate to age and size. There shall be information on pediatric medication dosing with this equipment.	**E**	**E**	**E**
b. Cardiopulmonary bypass capability.	**E**	**O**	**-**
c. Operating microscope.	**E**	**O**	**O**
d. Thermal control equipment			
i. For patients	**E**	**E**	**E**
ii. For blood & IV fluids	**E**	**E**	**E**
e. 24 hour per day x-ray capability, including C-Arm image intensifier.	**E**	**E**	**E**
f. Endoscopes and bronchoscopes.	**E**	**E**	**E**
g. Rapid infuser system	**E**	**E**	**E**
h. Craniotomy instruments	**E**	**E**	**-**
i. Capability of fixation of long bone and pelvic fractures.	**E**	**E**	**O**
C. Postanesthesia Recovery Room or Surgical Intensive Care:			
1. Personnel:			
a. 24 hour per day (in-house or on-call) staffing by RN's	**E**	**E**	**E**
2. Equipment for patients of all ages, to include:			
a. capability for resuscitation and continuous monitoring of temperature, hemodynamics & gas exchange	**E**	**E**	**E**

Trauma Center Criteria

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	Levels		
C. Postanesthesia Recovery Room or Surgical Intensive Care: (cont'd)	**I**	**II**	**III**
b. Thermal control equipment:			
i. for patients.	**E**	**E**	**E**
ii. for IV fluids, blood and blood products.	**E**	**E**	**E**
c. rapid infuser.	**E**	**E**	**E**
In the event that patients are boarded in the PACU as ICU overflow patients, then the equipment listed in section V.D.2 must be available.	**E**	**E**	**E**
D. Intensive/Critical Care Unit:			
1. Personnel:			
a. Designated surgical director or co-director.	**E**	**O**	**O**
b. Designated medical director or co-director.	**E**	**E**	**E**
c. Registered Nurses, educated in trauma care, should have a patient ratio of not more than two patients per RN.	**E**	**E**	**E**
d. Physician on duty in the ICU 24 hours per day or immediately available from within the facility as long as this physician is not the sole on call MD for the emergency department.	**E**	**E**	**O**
e. Physician on duty in the ICU 24 hours per day or immediately available from within the hospital (which may be a physician who is the sole physician on call for the emergency department).	**-**	**-**	**E**
2. Intensive Care Unit Equipment:			
a. For trauma centers caring for pediatric patients, there shall be equipment corresponding to the adult equipment, appropriate to age and size. There shall be information on pediatric medication dosing with this equipment.	**E**	**E**	**E**
b. Airway control & ventilation equipment (laryngoscopes with a variety of straight and curved blades, endotracheal tubes of all sizes, bag valve masks and methods to continually provide supplemental Oxygen)	**E**	**E**	**E**
c. Oxygen source with concentration controls.	**E**	**E**	**E**
d. Cardiac emergency cart.	**E**	**E**	**E**
e. Temporary transvenous pacer.	**E**	**E**	**E**
f. Bedside monitor with central monitoring capabilities to include: ECG, Pulse Oximetry, pressure monitoring abilities (ICP, Venous & Arterial).	**E**	**E**	**E**
g. Cardiac Monitor immediately available with capabilities to include: ECG, Pacing, external & internal defibrillation.	**E**	**E**	**E**
h. Mechanical ventilator.	**E**	**E**	**E**
i. Patient weighing devices.	**E**	**E**	**E**
j. Pulmonary function measuring device.	**E**	**E**	**E**

Trauma Center Criteria

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	Levels		
2. Intensive Care Unit Equipment: (cont'd)	**I**	**II**	**III**
k. Temperature control devices for patients	**E**	**E**	**E**
l. Rapid IV fluid infuser capability.	**E**	**E**	**E**
m. Intracranial pressure monitoring device	**E**	**E**	**O**
n. Capability to perform blood gas measurements, hematocrit levels & chest x-ray studies.	**E**	**E**	**E**
F. Radiological Services: (available 24 hours per day)	**E**	**E**	**E**
1. 24 hour per day in-house radiology technician.	**E**	**E**	**E**
2. X-ray interpretation by radiologist available 24 hours per day.	**E**	**E**	**O**
3. Angiography.	**E**	**E**	**O**
4. Sonography.	**E**	**E**	**O**
5. Computed Tomography Scanning (CT)	**E**	**E**	**E**
6. 24 hour per day in-house CT Technologist.	**E**	**E**	**O**
7. CT Technologist available within 30 minutes of notification or documentation that procedures are available within 30 minutes.	**-**	**-**	**E**
8. Magnetic Resonance Imaging (MRI).	**E**	**O**	**O**
9. Resuscitation equipment to include airway management and IV therapy.	**E**	**E**	**E**
G. Clinical Laboratory Service: (to be available 24 hours/day)			
1. Standard analysis of blood, urine, and other body fluids, including micro sampling when appropriate.	**E**	**E**	**E**
2. Blood typing & cross-matching.	**E**	**E**	**E**
3. Coagulation studies.	**E**	**E**	**E**
4. Comprehensive blood bank, or access to a community central blood bank with storage facilities.	**E**	**E**	**E**
5. Blood gas & ph determination abilities.	**E**	**E**	**E**
6. Microbiology abilities.	**E**	**E**	**E**
VI. Performance Improvement Program:			
A. Organized performance improvement program (PI) to examine the care of the injured patient within the facility, that looks towards improving outcome, decreasing complications and improving efficiency. The process should clearly document the PI process, action plan and resolution of the issue.	**E**	**E**	**E**
1. Demonstrate relationship between PI outcomes and new or revised clinical protocols.	**E**	**O**	**O**
2. Expansion of PI program to include regional trauma systems.	**O**	**O**	**O**
B. Performance improvement program should follow state recommended audit filters at minimum.	**E**	**E**	**E**

Trauma Center Criteria

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	Levels		
Performance Improvement Program: (Cont'd)	**I**	**II**	**III**
1. Participates in the creation of institutional/regional based audit filters as identified by the institution/regional PI committees.	**O**	**O**	**O**
C. The hospital shall set a time that the trauma surgeon has to respond to a full trauma team response. This policy should be available to be reviewed during the site review team visit.	**E**	**E**	**E**
D. Applying outcomes/benchmarking activity.	**E**	**E**	**E**
E. Participation in the Statewide Trauma Registry as mandated by the Code of Virginia. Data must be submitted to Trauma Registry within 30 days from the end of a quarter and includes: i. patients with ICD9-CM codes of 348.1, 800.0 – 959.9, 994.0 and 994.1, excluding 905-909 (late effect injuries), 910-924 (blisters, contusions, abrasions and insect bites), 930-939 (foreign bodies) ii. Only those patients that were admitted to the facility are required to be reported. Includes admissions for observation (not ER observation unless held in the ER due to no inpatient bed availability). iii. patients transferred from one hospital to another because of acute trauma (patient may be transferred directly from the Emergency Department or from an inpatient unit). iv. victims of acute trauma that die within the hospital, Including, the emergency department and DOA's. *hospitals may over report within these ICD9 codes if desired for internal reporting.	**E**	**E**	**E**
1. Compliance with section E above on a quarterly basis.	**E**	**E**	**E**
a. Utilization of State Registry/NTDB for purposes of institutional/Regional/State Research, Benchmarking for performance improvement and or Injury Prevention Programs. For mature trauma centers (by the second verification visit), becomes a minimal standard.	**O**	**O**	**O**
F. A forum, including the Trauma Medical Director, E.D. Director, Trauma Coordinator, designee from Trauma subspecialties (neurosurgery, orthopedics) as specific issues present for multidisciplinary review of care of the injured patient including policies, procedures, system issues, and outcomes may include pre-hospital, nursing, ancillary personnel, a hospital administrator and physicians involved in trauma care. (The forum in G, below, may be combined with this meeting)	**E**	**E**	**E**
1. 50% attendance by committee members (or designee) at multi-disciplinary review of care meetings.	**E**	**E**	**E**

Trauma Center Criteria

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	Levels		
Performance Improvement Program: (Cont'd)	**I**	**II**	**III**
Performance Improvement Program: (Cont'd)			
G. The hospital will have a structured peer review committee, that must have a method of evaluating trauma care. This committee must meet at least quarterly and include physicians representing pertinent specialties that include at least, trauma surgery, neurosurgery, orthopedics, emergency medicine, anesthesiology, and may include hospital management and other subspecialties as required. The TPM/TNC or designee may be a member. Outcomes of peer review will be incorporated into the educational and policy program of the trauma service. (The forum in F may be combined with this meeting)	**E**	**E**	**E**
H. Trauma Research Program:			
1. Trauma Research Program designed to produce new knowledge applicable to the care of injured patients to include: an identifiable institutional review board process.	**E**	**O**	**O**
2. A trauma research program designed to produce new knowledge applicable to the care of injured patients to include; three peer review publications over a three year period that could originate in any aspect of the trauma program.	**E**	**O**	**O**
3. A nursing specific trauma research program designed to produce new knowledge applicable to the care of the injured patients to include trauma nursing research. Should have one publication in a three year period.	**E**	**O**	**O**
VII. Outreach Program:	**I**	**II**	**III**
A. Annually partner with the top three referring/receiving facilities to assess, plan, implement and evaluate physician and nursing trauma educational needs of those facilities transferring severely injured patients.	**E**	**E**	**E**
B. Each trauma center will maintain a document that reflects the functional process for providing case specific complimentary and/or constructive feedback to the top three referring/receiving facilities for extraordinary situations.	**E**	**E**	**E**
C. Each trauma center will collaborate with the top three regional transferring/receiving facilities to design and provide an annual facility specific registry report by using the hospitals PI infrastructure for transmission.	**E**	**E**	**E**

Trauma Center Criteria

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	Levels		
VII. Outreach Program: (cont'd)	**I**	**II**	**III**
D. Each trauma center will have in place a method for showing their involvement with the Emergency Medical Services agencies and/or personnel in there region. The trauma centers should be involved in EMS education, performance improvement and a method of providing complimentary and/or constructive feedback in general or case specific as needed.	**E**	**E**	**E**
E. Each trauma center will have in place a method for showing their involvement with the community in their region. The trauma center should be involved in community awareness of trauma and the trauma system.	**E**	**E**	**E**
VIII. Injury Prevention Program:			
A. Demonstration of injury prevention activities based upon identified regional needs.	**E**	**E**	**E**
1. Participation in a statewide trauma center collaborative injury prevention effort focused on a common need throughout the commonwealth.	**O**	**O**	**O**
2. Perform studies in injury control while monitoring the effects of prevention programs.	**O**	**O**	**O**
IX. Hospital Documents			
A. Evidence of American Board of Surgery certification documented in credentials file or other documentation showing active pursuit of current certification or re-certification in General Surgery by Trauma Surgeons. Must be eligible for certification.	**E**	**E**	**E**
B. Evidence of recognized board certification documented in credentials file or other documentation showing active pursuit of current certification or recertification in Emergency Medicine or appropriate specialty by emergency department physicians.	**E**	**E**	**E**
C. Documentation of ATLS and continuing education as outlined throughout this document.	**E**	**E**	**E**
X. Institutional Commitment:			
A. Demonstrates knowledge, familiarity, and commitment of upper level administrative personnel to trauma service.	**E**	**E**	**E**
B. Upper level administration participation in multi-disciplinary trauma conferences/committees.	**E**	**E**	**E**
C. Evidence of yearly budget for the trauma program.	**E**	**E**	**E**

ADMINISTRATIVE GUIDELINES

Purpose:

The purpose of the administrative and interpretive guidelines is to provide information pertaining to the process of designation and verification of trauma centers in Virginia. It is divided into two sections; administrative guidelines describing the procedures and steps required for the process and interpretive guidelines describing how trauma center criteria should be evaluated during a site visit. The document is designed to be used with Virginia Trauma Center Criteria.

The objective is to provide a consistent, objective and meaningful approach to the designation process.

Background:

In Virginia the lead EMS agency is the Office of EMS. The office coordinates the development and administration of trauma center designation throughout the state. The earliest Level I trauma centers were designated in 1983 and 1984.

The trauma system in Virginia is inclusive. All hospitals with 24 hour emergency rooms provide some degree of trauma care. The decision to become a designated trauma center is voluntary. Designation carries a cost related to the fact that the trauma services must be continuously available for patients who might require them. Triage guidelines act to direct severely injured patients to the nearest appropriate trauma center.

Designation occurs at three levels. Level I and II trauma centers should be capable of managing severely injured patients. Level I centers must demonstrate a higher level of commitment to research, prevention and education. Level III centers demonstrate an increased commitment to trauma care, managing moderately injured patients and rapidly resuscitating and transferring more severely injured patients. Undesignated trauma centers must recognize, resuscitate and transfer most trauma patients.

All hospitals whether designated or not should make every effort possible to participate in and to improve the trauma system. Due to the unexpected nature of injury, trauma patients and their families cannot choose their location of care. It is incumbent upon the healthcare system to provide these patients with the most optimal care possible regardless of location and circumstances. The purpose of the designation process is to assure consistent performance of entry level trauma centers and to promote continued improvement and development of experienced centers.

I. Record keeping

Overview: The trauma system in Virginia is dynamic. Centers change in response to pressure of the healthcare environment and criteria and processes for evaluation change as trauma care evolves. Maintaining records consistently over a period of time achieves several purposes. It provides a series of system snapshots over time. It allows centers and OEMS to refer back to actions taken in the past. Finally; it allows a summation of trauma center performance rather than a series of unrelated and disjointed episodic views. In order to accomplish these goals, the records must be identifiable, consistent, accessible and maintained in a predictable fashion.

A. Documents and revisions of documents will be numbered and maintained by the office of EMS. This process is put into place to avoid confusion with regard to which version of a document is in use during the site visit. When a trauma center is scheduled for a visit, the Trauma/Critical Care Coordinator will provide the title and number assigned to the documents to be used during the visit. These will include the trauma center criteria and the administrative and interpretive guidelines, as well as any other documents considered to be pertinent.

B. Each trauma center will have a file maintained for a period of not less than ten years after the most recent trauma visit. The file will include:

A. Records of each site visit to the institution with the following information:

1. Written application, including impact statement.
2. Version of trauma center criteria in use.
3. Version of administrative and interpretive guidelines in use.
4. Written preliminary report and suggestions for remediation by site visit team.
5. Final report of site visit team with specific findings and remediation.
6. Written documentation of remediation.
7. Closure of remediation by site team leader.
8. Copy of written action by Health Commissioner.

B. Records pertaining to any voluntary or involuntary withdrawal from the system.

C. Any additional communication pertaining to trauma center status between the center and OEMS or the Health Commissioner.

D. A summary of activity related to the trauma center (a list of dates, nature of actions and resulting status of center)

C. A copy of the current trauma center file will be sent to the trauma program manager and to the medical director at the time of request for verification or designation. These individuals will review the information contained for accuracy and provide written confirmation to the office of EMS.

D. Management of records during visit:

A. Each member of the site review team will receive a copy of the trauma center file in its entirety at least two weeks prior to the visit.

B. Team members will receive electronic or written application material at least two weeks prior to the visit.

E. Preliminary report of findings will be made available to the center prior to the time of departure of the site visit team.

A. The center will receive a written copy of preliminary report listing issues of concern, strengths and areas for improvement.

B. The team will also provide specific preliminary suggestions for remediation in writing at time of departure.

F. The team leader will provide written confirmation of preliminary findings and remediationor amended findings and remediation within one week of finishing the site visit.

G. After any conditions of remediation have been satisfied, the site review team leader will provide OEMS with written notice of closure of remediation.

II. Application for review

A. Six months prior to the date a center is due for site review, the Trauma/Critical Care Coordinator for the OEMS will notify the trauma program manager and provide the following

A. Application to be completed.

B. Copy of trauma center file on CDROM.

C. Copy and version number of Criteria and AIG to be used during review.

B. Application will include:

A. A signed code of conduct.

B. Impact statement - The impact statement describes the role of the trauma center or proposed center in the system it serves. The statement acts as an argument for the existence of the center and its essential contributions to the community.

C. A trauma service summary-numerical description of service demographics.

D. A response and follow up of previous critical deficiencies and non-critical deficiencies.

E. A list of significant physical plant changes during period since the last visit.

F. Any changes since last visit.

1. Significant system changes (e.g. addition or subtraction of helicopter service, new trauma programs in area, withdrawal of programs).

2. Hospital clinical capabilities such as pediatric ICU, neurosurgery.

3. Organizational changes - ownership of hospital, change in departmental or divisional status

4. Personnel changes since last visit - all changes for trauma director and trauma nurse coordinator.

G. Issues which the center identifies as current problems and steps in progress for remediation.

H. Current copy of organizational chart describing relationship of trauma program to hospital organizational structure.

I. Name of parent company (if any).

J. Name and contact information for current chairman of board of directors.

K. Indication that the trauma file has been reviewed and essential information is correct.

L. Contact information for trauma program director and medical director.

III. Prior to visit, site team shall have:

A. Complete copy of trauma center file

B. Full copy of pre-visit application.

C. Current status of center with regard to statewide trauma registry provided by OEMS

D. List of any trauma related issues requiring investigation by The Department of Health since last visit, along with resolution.

IV. Site review

Overview: Without trauma patients, a trauma center cannot demonstrate the consistency and effectiveness of procedures and protocols put into place at the time of its inception. However in a well developed system with a strong trauma triage element, severely injured patients will be directed toward existing designated trauma centers. A paradoxical situation develops; the center should not be designated until it demonstrates effectiveness, yet cannot demonstrate effectiveness until receiving patients as a trauma center. To remedy this situation, first time institutional reviews will be to survey for a provisional status.

Although it is important for a center to demonstrate its level of performance, the public must not be put at risk for suboptimal care. Therefore; the second review following a short interval will be for full designation. The interval will allow the center to put its documented plan for trauma care into action. In addition, the institution will have an opportunity to correct any deficiencies identified by the original site review team. At the time of the second site visit (the first designation visit) the center will either

pass or not pass. Any identified critical deficiencies will result in a mandatory period during which the institution will re-evaluate the trauma program prior to beginning the designation process over again.

A. Provisional center – 1 year period.

1. At the provisional visit, the center must demonstrate that all required mechanisms to meet criteria are in place. The team will confirm that there is a resource, policy or procedure that addresses the criteria and that it represents a practical and effective approach.

2. The team will identify the following:

(1) Critical deficiencies.

(2) Non critical deficiencies.

(3) Potential areas for improvement.

3. The presence of critical deficiencies will be cause to withhold provisional designation. The center must re-evaluate its program and if desired, begin the application process again after a period of not less than one year.

4. When non-critical deficiencies exist or in the absence of deficiencies, the program will receive provisional status for a period of one year. During this time, it will function at the identified level and remedy any non critical deficiencies identified at the first site visit.

B. **Designation -** A second site visit will occur at the end of the hospitals one year provisional status. The hospital does not have to submit a full application, but should submit an interim report describing any changes since designation as a provisional center, status of non critical deficiencies noted during the first site visit, as well as a trauma service summary from its trauma registry.

The modified site review team will consist of a Surgeon Team Leader and a Trauma/Critical Care RN. The Surgeon Team Leader or Office of EMS may add additional members to this team as deemed necessary.

Any critical deficiencies identified at this time will result in the center not receiving designation as a trauma center. The hospital will not function as a trauma center if this occurs and will re-evaluate and revise its current program for at least two years prior to beginning the application process again.

C. **Verification-**Following designation, a center will undergo verification visit every three years Having become designated, an institution must continue its developmental process. A progressively sophisticated approach is expected of more experienced centers and is reflected in a number of the criteria. This is particularly apparent in the area of quality assurance. Continuous improvement means continuous change. An experienced program is expected to demonstrate ongoing evaluation of the

trauma care system, presenting enhanced approaches to existing problems or efforts at solving newly identified problems. For this reason, it is unlikely that an experienced program will be successful if unable to present progress and changes over a period of two to three verification cycles. Verification visits follow a successful designation visit and should document ongoing development of the center and responsiveness trauma system issues.

1. A full application will be submitted for each verification visit

2. In the absence of critical deficiencies or persistent non-critical deficiencies the center will be confirmed at its current level of function.

3. If a non- critical deficiency has been identified for the first time it will be noted in the team leaders' summary. However, if a non-critical deficiency is identified in two out of three sequential visits, the center will be asked to submit a plan of correction to OEMS within three months. At the next site visit, the center will provide evidence of having implemented the plan and improvement in the area of deficiency identified.

V. Withdrawal

Overview – As an advocate for quality trauma care, a trauma center should be able to identify situations in which it no longer meets criteria required for its current level of designation. If this occurs, the center should notify OEMS requesting a temporary withdrawal, permanent withdrawal or request for re-designation (either upgrade or downgrade). Identification and self reporting of the problem is more advantageous than waiting for an adverse result of a verification visit or complaint resulting in involuntary withdrawal.

A. Temporary - A hospital may request a temporary withdrawal from the system if unforeseen and uncontrollable circumstances prevent the center from functioning at its designated level and if the period of time is expected to be longer than one day and less than three months. Requests for temporary withdrawal greater than three months will require a site review team visit.

Examples include death, disability, resignation, retirement, etc. of key individuals on the trauma service, or an internal disaster such as a fire or flood. A representative from the hospital will notify the Office of EMS regarding the request for temporary withdrawal by phone or e-mail as early as possible. Initial notification shall be followed by a written report outlining the circumstances, the plan to correct the circumstances, the anticipated length of temporary withdrawal and any arrangements to maintain trauma care within the system (e.g. MOU's with other hospitals, notification of EMS) within 14 days. Once the problem has been corrected the trauma center will notify the Office of EMS. A site visit is not required for re-instatement. If the center is involved in remediation for critical deficiencies at the time of request for temporary withdrawal, the timeline for remediation is not altered and no extension is applied.

B. Permanent- If a hospital wishes to discontinue its role as a trauma center it may request a voluntary withdrawal. The institution is not required to provide a reason for this although the Office of EMS may request information to facilitate evaluation of the trauma system. The hospital should provide the request for voluntary withdrawal in writing. Included with the request should be a copy of the most recent impact statement and suggestions for changes in the system to allow for accommodation of gaps in

trauma coverage. Following voluntary withdrawal, a center may apply for re-designation at any level desired after a period of not less than one year. The center will arrange for notification of the public and EMS agencies regarding the change in status. Only one voluntary withdrawal is permitted within a ten year period of time

C. Re-designation (upgrade) - The facility requesting an upgrade in level of trauma center designation will be required to undergo a full site review at the level of redesignation being requested. The site review must occur prior to functioning at the requested level of redesignation. Since this is a new designation a verification visit will be required in two years.

D. Re-designation (downgrade) – If a facility requests a downgrade in level of designation, a modified site visit will be performed to assure the facility is functioning at the level of designation being requested.

E. Involuntary- An involuntary withdrawal occurs when a center fails to remediate critical deficiencies as outlined by the site visit team, or if a visit by a site review team or Office of EMS representative determines that further function as a trauma center would be a risk to patient safety or extremely detrimental to the system. If this occurs, the center has the option of an appeals process outlined below. At the time of an involuntary withdrawal, the Office of EMS will provide notification to the public and to EMS providers in the area. Following the first involuntary withdrawal, an institution may request re-designation after a period of not less than three years. After any subsequent involuntary withdrawals the institution will not be permitted to apply for re-designation sooner than five years.

VI. Appeal

If a hospital, whether designated or attempting to be designated, has a grievance with findings relating to the enforcement of the Virginia Trauma Center Criteria by The Virginia Department of Health, Office of Emergency Medical Services, a site review team leader, a site review team member, the Trauma System Oversight and Management Committee or any sub committee formed from the TSO&MC may appeal the finding.
The appeals process will follow the Administrative Process Act of Virginia § 2.2-4000. Notice of intent to appeal should be documented and submitted to the Office of EMS as stipulated in § 2.2-4000.

VII. Site Review Team Member Roles, Training and Recruitment

A. Site Review Team Member Roles (refer also to site visit checklist for more details)

A. A Surgeon Team Leader officiates over the site review team and provides a written summary and recommendation upon the application to the Health Commissioner. The Surgeon Team Leader will review the surgical capabilities of the hospital and whether they meet the essential criteria for the level of designation/verification being applied for.

B. An Emergency Medicine Physician will review the emergency departments' response to trauma patients. This would include whether there is an appropriate team response to trauma

patients, the care provided during that response and the availability of ancillary services during the initial phase of trauma care.

C. A Trauma/Critical Care Registered Nurse will review all phases of nursing care provided by the applying center. This would include assuring there is adequate staffing and equipment available, as well as quality nursing care provided during the trauma team response, within the critical care department and inpatient areas.

Trauma Nurse Coordinator's role within the trauma program will also be evaluated by the Trauma/Critical Care RN.

D. A Hospital Administrator role will also be utilized to evaluate the over all commitment that the hospitals administration has to the trauma program.

B. Training - The Office of EMS and the Trauma System Oversight and Management Committee will provide a training program, suited for both classroom presentation and self learning which will assure the site reviewer's knowledge of the current criteria and their role as a site review team member.

C. Recruitment – The Office of EMS and the Trauma System Oversight and Management Committee will assure that there are an adequate numbers of site reviewers. To qualify as a site review team member, the individual will be required to observe a minimum of one site review, receive the site review training and be approved by vote of the TSO&MC.

D. The Office of EMS will maintain records on individual site reviewer activities including dates, locations and outcomes of reviews

E. OEMS will solicit evaluations of site team leader performance

INTERPRETIVE GUIDELINES

Purpose: The purpose of the interpretive guidelines is to describe how the specific criteria should be interpreted by site visit teams.

A. Trauma Program:			
1. Mission statement emphasizing continuous performance improvement in the management of the trauma patient.	**E**	**E**	**E**
2. A recognizable program within the hospital which has a surgeon as its director/coordinator/physician in charge.	**E**	**E**	**E**
3. Support of the facilities' Board of Directors. (Board of Directors should be notified of applications for trauma designation, verification and approval of the Commissioner of Health after a site review).	**E**	**E**	**E**
4. Administration supportive of Trauma Program.	**E**	**E**	**E**
5. Evidence of an annual budget for Trauma Program.	**E**	**E**	**E**

Section 1: Trauma program

While all hospitals participate in trauma care, one of the cardinal differences between a designated trauma center and an undesignated hospital is the trauma program. The purpose of the program is to integrate, coordinate, develop and evaluate the components necessary for effective care of the seriously injured patient. While each of the components such as a trauma surgeon or emergency resuscitation equipment may be adequate on an isolated basis, it is the integration of the components that enhance trauma care. The program should address all levels of care from pre-hospital to post discharge. All trauma programs function within a trauma system. The function and participation of the program within the system will be evaluated during the visit.

Surveyors will be evaluating the hospital for a robust and active trauma program. The mission statement and the impact statement describe the role of the program and its expected impact in regional trauma management respectively. The impact statement is an argument for the existence of the trauma center. This document should briefly identify the trauma resources available in the region and why the hospital thinks becoming a trauma center is necessary. Examples of benefits include, but are not restricted to; geographically underserved area, inadequate number of trauma beds or improvement in care of patients already received.

Administrative commitment to the trauma program is essential. This is evaluated by the administrator during the visit. Key considerations include:

Is there evidence of long term institutional commitment to the program?

Nursing staff, hospital administration and medical staff must be committed to maintaining the program. The presence of support from only one or two of these groups or significant resistance from any one of these groups is an area of concern and represents a non-critical deficiency. However, resistance from an isolated individual or small group of individuals must be evaluated on a case by case basis, taking the impact on the program into consideration. For example, objections to the trauma center effort by a CEO of a hospital represents a more insurmountable problem than objection by two or three sub-specialists in different clinical areas. While letters of support from key participants are not essential, these may serve to indicate institutional commitment. In addition, the administrator surveyor will interview administrative representatives to determine institutional

commitment. At minimum, leadership in the areas of nursing, medical staff, and administration should be able to identify the presence of the program and general information regarding structure and function. The organizational chart submitted with the written application will be important in determining location of the program in the hospital structure and reporting relationships. Administrative responsibility for the program should be clearly defined and in the hands of an individual with a clear understanding of the needs of trauma patients and the process of designation as well as the authority to promote development of the program.

Are sufficient resources available to maintain the program?
Institutions should have an allocated budget for the trauma program, however; the institution can demonstrate compliance with the criteria by documenting that the expenses and revenues associated with the program are routinely evaluated. Development and maintenance of any level of trauma center requires non-clinical time, space, equipment and supplies. Allowances for these should be included in the budget. As the number of patients admitted to the service increases, it is reasonable to expect increasing demands in terms of non-clinical time and support. For example, according to ACS recommendations, a full time registrar is expected to manage information entry and retrieval on 1000 patients or less. The site review team should identify sufficient resources to support non-clinical activities. They will be aware of the fact that multiple management responsibilities may prevent functioning at full time status.

There should also be demonstrated effort to identify costs related to the trauma program. It is important for the hospital leadership to be aware of this in order to avoid sudden discoveries of expenses and equally sudden withdrawals. Additionally, it is difficult to determine if resources are adequate if program expenses are unknown. In recent years, trauma centers have also been asked to provide information on the cost of trauma care in order to assess the overall impact of this on Virginia Healthcare; in this setting provision of general information on expenses and reimbursement is a means of participation in the trauma system. There is currently no standard reporting format for expenses, reimbursement and budgetary allocations. Financial information on the trauma program should be collected and reported to the administration, trauma nurse coordinator and trauma service director in a manner which is meaningful and useful for planning.

Critical Deficiency:

- The site review teams finds evidence of the absence of overall financial commitment to the trauma program.
- The site review teams finds evidence of insufficient resources being allocated for trauma care.
- Failure to budget adequately for non-clinical activities related to maintaining the trauma program.

Non Critical Deficiency:

- Absence of attempt to review program costs (clinical and non-clinical)

Does the hospital leadership have reasonable expectations of the program?
The process of becoming a center and maintaining designation is arduous. It is important to understand what the hospital administration hopes to gain from the designation. If expectations are unrealistic, a long term commitment will not be possible. This will be particularly true if the medical staff and administration have divergent goals. Interviews with the appropriate members of the hospital's leadership may be used to determine this.

Does the program have a long term plan?
This version of the trauma criteria emphasizes continuous development and improvement. Presence of a planning process for the program (which may include a business or strategic plan) allows for anticipated response to changes in the trauma care environment as well as possible improvements in delivery of care. Programs are expected to show progress and capacity for change in response to environmental stresses. During the site visit opening conference the director will be asked to list strengths and weaknesses of the program.

Non Critical Deficiency:

- Absence of formal planning process for trauma program.
- Failure to include representatives of different areas pertinent to trauma care.

B. Trauma Services:			
1. Trauma Program Medical Director:			
a. Board certified/eligible general surgeon. May have emergency medicine physician as Co-Director.	**E**	**E**	**E**
b. Minimum 3 years experience on trauma service or trauma fellowship training.	**E**	**O**	**O**
c. Participates in regional and national trauma organizations.	**E**	**O**	**O**
d. Involved in trauma research and includes the publication of results and presentations.	**E**	**O**	**O**
e. Actively involved in providing care to patients with life threatening or urgent injuries to discharge.	**E**	**E**	**E**
f. Oversees all aspects of multidisciplinary care from the time of injury to discharge.	**E**	**E**	**E**
g. Current ATLS provider or instructor.	**E**	**E**	**E**
h. Will have 30 hours of category I trauma/critical care CME every three years and attend one national meeting whose focus is trauma or critical care.	**E**	**E**	**O**
i. Will have 30 hours of category I trauma/critical care CME every three years and/or attend one national meeting whose focus is trauma or critical care.	**-**	**-**	**E**
j. Attends more than 1 national meeting over 3 year period.	**O**	**O**	**O**

Is there an identifiable trauma service?
The trauma service provides the clinical framework for the management of critically ill trauma patients. The framework of the service varies with the institution and the number of patients admitted. It is not mandatory that patients be admitted to a single geographic unit within the hospital or to a single individual. The service should be identified in the organizational chart of the hospital. It must have a board certified surgeon as its medical director, a trauma registrar and a trauma nurse coordinator. Patients on the service must be evaluated by a trauma surgeon and in cases of multiple system injury, single system major injury, torso or vascular trauma the patient must be admitted to the surgeon. This should be the case even if a general surgical procedure is not anticipated. There should be a trauma program manual with policies and protocols pertaining to the admission and care of trauma patients. The trauma program manual should clearly describe which patients are admitted to the service and which, if any, will be transferred to another facility. Special groups of patients, such as pediatrics, should be addressed.

There must be a description of the automatic trauma response and roles and responsibilities of individual trauma team members.

A two tier response allows for the in-hospital triage of injured patients. The patient thought to be less severely injured can be evaluated with less mobilization of hospital resources and medical personnel. Full mobilization must be immediately available and demonstrable if the patient is proven to be more severely injured than expected.

Criteria for the construction of tiers of response may be developed by the institution's multidisciplinary committee. The composition of the response team should ensure adequate ability to evaluate and treat the injured patient. For example, for the less severely injured patient, the trauma surgeon need not be available in the trauma treatment area when the patient arrives, but must be notified, available and see the patient in a reasonable time period after admission. Likewise, anesthesia, certain additional nursing, radiology and laboratory personnel need not be present in the trauma treatment area, but must be immediately available.

An example of a successful application of triage criteria for a two tier system is noted in Appendix F. A "blue" alert signifies a severely injured patient and the "yellow" alert is the stepdown status. If an institution opts to use a two tier system, then a site review team will expect to see criteria for the delineation of the tiers, the composition of the response teams for each tier and a PI process that shows the system is functioning properly.

All patients admitted to the service should be entered in the trauma registry and care reviewed with the trauma PI plan, this is in addition to the State mandated trauma registry reporting requirements. In addition, cases which appear to have been under triaged and therefore not admitted to the service should be reviewed as well. Other indicators of the service include but are not restricted to case management, common clinical pathways and patient education.

Critical Deficiency:

- Absence of identifiable trauma service.
- Absence of Trauma Director or Trauma Nurse coordinator.
- No trauma program manual.
- No identifiable trauma response.
- Consistent failure to implement trauma response as described in the trauma program manual.
- Absence of trauma registrar.
- Trauma program manual procedures and protocols do not reflect actual practice.

Non Critical Deficiency:

- Trauma program manual is inadequate to provide necessary framework for service.
- Key hospital staff, trauma surgeons and specialty medical staff unaware of contents of trauma program manual.
- Occasional failure in application of trauma response not addressed in PI process.
- Trauma team response cumbersome and/or poorly communicated to trauma team or delayed.

Trauma Program Medical Director

The medical director of the trauma program must be a board certified general surgeon. In addition the director must have at least three years experience as a surgeon on a trauma service or in a setting with a high clinical volume of trauma patients. This may take place during residency or fellowship provided the residency or

fellowship occurs in a designated Level I or Level II trauma center. If a medical director has not worked in a trauma center for three years he or she should provide an indication of volume and activity at a previous institution. This experience must have taken place within the last ten years.

The trauma director must be currently active in delivering clinical care to trauma patients. The job description and interviews with hospital staff must confirm that the director has the authority and responsibility to oversee multidisciplinary aspect of trauma care. This does not mean that the director must be clinically involved with the care of each patient; rather he must have administrative responsibility pertaining to organization, coordination and evaluation of care.

The medical director must remain current in trauma care. For this reason he/she must maintain current certification in ATLS either as an instructor or as a provider. In addition the trauma director is required to obtain a minimum of 30 hours continuing education in trauma care every three years. While a portion of this continuing education may be obtained on site, the director must attend at least one national meeting with a focus of trauma or critical care within the three year verification cycle.

It is essential that the trauma director remain active in development and management of the trauma system on the state and regional level. This will be demonstrated by evidence of attendance and participation in regional, state or national level trauma system and trauma performance groups.

The institution may choose to add an emergency physician co-director to the program. The presence of a co-director does not change requirements for experience, education and participation of the surgeon in the program. Advantages of a co-director include assistance in performing administration, coordination, education and evaluation of care normally assigned to the surgeon director. Additionally; the emergency physician will provide a different emphasis on the management of trauma with a greater focus on acute resuscitation. No requirements are provided for the position of trauma co-director. However; if the institution chooses to include this position, it must provide a job description and qualifications.

Critical Deficiency:

- Current medical director does not meet qualifications- e.g. not surgeon, incomplete or remote prior experience.
- Medical director education not up to date; not current in ATLS, no attendance at national meeting, less than 30 hrs continuing education in critical care and trauma over three years.

Non Critical Deficiency:

- No evidence or only sparse participation at local state or regional systems efforts.
- No publications or presentations.
- If a co-director is included, no job description or qualifications.
- Job description or performance of trauma medical director does not indicate sufficient oversight of service.

I. Institutional Organization (Cont'd)	I	II	III
k. The Trauma Program Medical Director will provide an annual meeting and/or a self learning packet/web based learning program. All of the following shall receive this training: • All full and part time surgeons taking trauma call. • The Trauma Program Manager/Trauma Coordinator. • Nurse practitioners and physicians assistants affiliated with the trauma program. • All full and part time emergency department physicians who may be caring for trauma alert patients in the Emergency Department. • All nurse practitioners and physicians assistants who may be caring for trauma alert patients in the Emergency Department. The Trauma Program Medical Director will provide the following updates during this meeting: i. Highlights from national meetings and other continuing education to include a discussion of any changes applicable to the current guidelines and practice. iii. A review, including updated information from ATLS. **OR** Each surgeon, emergency physician, nurse practitioner or physicians assistant participating/taking call in the service or could possibly be caring for trauma alert patients in the emergency department must complete 30 Category I CME's in trauma/critical care across the 3 year verification period or 20 across the 2 year designation period. Updating ATLS may be included in these CME's *The facility must choose between providing an annual update or CME tract to educate physician staff.	**E**	**E**	**E**

Continuing Education Program:
The medical director of the trauma service is responsible for developing a program to address continuing education needs for those individuals responsible for the initial evaluation and ongoing medical care of trauma patients. With this version of criteria the list has been expanded and includes: trauma surgeons, emergency physicians, trauma program manager/nurse coordinator(s), residents (surgery and emergency medicine), nurse practitioners and physician assistants. All full and part time individuals are included in the program. Individuals not assigned to areas where potentially serious trauma patients are seen, need not be included. An example of this would be a physician's assistant who works only on the non-acute or "fast track" side of the ED. Documentation of participation in continuing education will be in the form of certificates or signed rosters. These should be available for the site team if requested at the time. Prior to the site visit, the institution will provide a roster of clinicians required to participate in the continuing education program.

The medical director may choose one of two tracks for continuing education in trauma care at the institution. All participants must participate in the same track (although content may vary according to category of participant). The selection of the continuing education tract must be indicated in the application. If the track is

changed, notification of the change, including pertinent dates, should be provided to all participants in writing and included in trauma committee minutes.

Track 1: The director with institutional technical assistance may choose to provide a program outlining highlights from recent national meetings, consensus documents, journals or textbooks outlining recent advances in critical care and trauma AND a brief overview of selected topics including recent changes in ATLS. This must be updated annually and may be in the form of a self-study packet, web or computer based program, an annual meeting or a prescribed combination. It is recommended but not essential that participants receive continuing education credits for this. It is essential that there be documentation of participation in the program by each individual. A written outline of this program must be provided at the time of the site review.

Track 2: Each of the participants must provide evidence of participation in 30 hours of continuing education in trauma or critical care over the three year period (or in the case of two year designation 20 hours). This may occur inside or outside of the hospital. ATLS may be included in the required number of hours, but does not replace them. In the event that a conference is only partially dedicated to these topics, the medical director must determine which portion of the conference was qualified, and apply only that amount of time to the total. For example:

a: A surgeon attends a conference titled "Current concepts in general surgery" for a total of eight hours continuing education. While most of the conference is on ambulatory surgery and breast cancer, one hour is spent on ultrasound examination of the trauma patient and one hour on ventilation of the critically ill patient. The surgeon can count two hours of continuing education on trauma and critical care.

b: A physician assistant has attended 12 mortality and morbidity conferences. Review of all M and M minutes for the hospital indicates that a quarter of the patients presented are trauma patients. The physician assistant can count three hours towards trauma and critical care.

When using track 2, it is the responsibility of the institution to calculate and tabulate the continuing education hours for each individual involved.

Any surgeon, emergency physician, nurse practitioner or physicians assistant participating/taking call in the trauma program or could possibly be caring for trauma alert patients in the emergency department who has been with the trauma program for greater than six months, but less than the interval between site reviews is expected to complete a portion of the educational program commensurate with the time they have been with the trauma program.

Any participant who withdraws from the roster for a period of not more than 12 months may have their CME requirements waived, commensurate with the length of their sabbatical. This may only occur once in a ten year period.

Critical Deficiency:

- Absent continuing education program.

Non Critical Deficiency:

- No more than one individual or 10% of the roster are not in compliance with continuing education requirements.

- Failure to clearly document participation in either track by the institution.
- Track 1 program superficial content or not up to date.
- Track 2 program failure to break out appropriate trauma care related hours from multidisciplinary patient care conferences.

2. Trauma Nurse Coordinator/Trauma Program Manager:			
a. Must have dedicated full time TNC/TPM.	**E**	**E**	**O**
b. Must have a TNC/TPM, may be a part-time position, though the trauma program shall be a major focus of their job description.	**-**	**-**	**E**
c. An identified TNC/TPM with overall management responsibilities for the trauma program.	**E**	**E**	**O**
d. Defined job description and organizational chart delineating the TNC/TPM role and responsibilities.	**E**	**E**	**E**
e. Must be a Registered Nurse.	**E**	**E**	**E**
g. The TNC/TPM, in addition to being a Registered Nurse, must possess experience in Emergency/Critical Care Nursing.	**E**	**E**	**O**
g. 30 CEU's/contact hours required per 3 year verification cycle, of which 50%, must be via an extramural source.	**E**	**E**	**O**
h. The TNC/TPM will attend one national meeting within the 3 year verification or 2 year initial designation period.	**E**	**E**	**E**
i. In addition to the national meeting in, I.B.2.h, attends other national meetings within the 3 year verification or 2 year designation.	**O**	**O**	**O**

Trauma Nurse Coordinator (Trauma Program Manager)
The trauma nurse coordinator is essential to the integration and smooth functioning of the trauma service. This individual acts as the liaison between the trauma service and the hospital services necessary to provide care for the multiply injured patient. The TNC/TPM also is the primary contact and resource for the nursing services required for trauma care from the time of admission to rehabilitation and follow up care. On most services the trauma nurse coordinator also provides the logistical support for implementing the Quality Improvement program.

While specific job descriptions vary based on trauma program organization and support, it is essential that a job description be present and accurately reflective of what is expected. An organizational tree should indicate reporting relationships. These two documents should outline sufficient levels of authority to perform PI, interact with nursing and ancillary services and to perform any other tasks outlined in the job description.

The broad range of tasks assigned to the TNC/TPM may quickly come to consume substantial amounts of time. For this reason TNC/TPM's associated with Level I and II programs must be dedicated full time positions without oversight of other programs or areas or significant clinical obligations. It is allowable for the TNC to perform occasional clinical trauma nursing activities if deemed necessary to maintain contact with clinical staff or in exceptional instances of demand. However this should not interfere with other trauma service obligations. In Level III centers a part time TNC/TPM is acceptable, however the job description and implementation of the position must allow adequate time to perform the duties as TNC.

In addition to being a registered nurse, Level I and II TNC/TPM's must have a minimum of three years of nursing experience in emergency/critical care nursing and provide documentation of continuing education specific to trauma and critical care as described in the criteria. All TNC's must attend a minimum of one national meeting every three years. This is to allow interaction with trauma staff outside of the hospital and to collect new information and updates on trauma management. For the same reason 50% of the continuing education hours (15 during a three year period must be off site). Attendance at a national meeting may be included in off site education hours.

Some programs include more than one nursing position. The titles for these positions may vary for example: trauma case manager, trauma nurse coordinator (in a program where there is a Trauma Program Manager) etc. The requirements above apply only to the individual identified as primarily responsible for the trauma program. However, if a nursing or other position is assigned to the trauma program, there must be a job description for the position, inclusion in the program organizational chart and plan for education commensurate with the position described.

While a specific number of continuing education hours is not required for Level III TNC's, it should be noted that these individuals often bear a significant responsibility for the trauma service, as the trauma medical director is often doing so on a part time voluntary basis and requires substantial support.

Critical Deficiency:

- No TNC or TPM.
- TNC/TMP Position not full time (Level I or II).
- TNC/TPM not RN.
- No job description for TNC/TPM.

Non Critical Deficiency:

- Insufficient prior critical care/emergency experience (Level I or II).
- Job description for any level is too extensive for time allotted.
- Insufficient continuing education hours off site or no attendance at a national meeting.
- If other program nursing positions are described, absence of job description and/or educational program.

3. Trauma Registrar:			
a. Must be a minimum of 1 full FTE dedicated to the Trauma Registry.	**E**	**E**	**O**
b. A minimum of a part time trauma registrar.	**-**	**-**	**E**
c. Trauma registrars must attend 24 hours registry or trauma critical care contact hours/education hours over 3 years.	**E**	**E**	**O**

Trauma Registrar

The trauma registrar is responsible for extracting information from charts, maintaining the trauma registry and developing and delivering reports from the registry. This role is vital in the maintenance of a robust PI program and in delivery of required trauma registry data to the state. The minimum requirement for Level I and II centers is a full time registrar, however with larger services more registrars or assistants are necessary.

In order to extract information from patient charts, the registrar must be familiar with how the trauma service works, as well as, terminology, coding and the use of various scoring systems used to describe the severity of trauma. The educational program for a full time trauma registrar consists of 24 hrs in three years on trauma, critical care, registry or data collection. While 24 hours is optimal for a part time registrar, there must be an educational experience at least proportional to the portion of time spent in that position.

The job description for the trauma registrar should clearly define the need to access patient records and to extract data. Key elements of the position include data extraction from charts, registry maintenance and report delivery.

Some programs may opt to use additional assistants to facilitate the role of trauma registrar. Examples of assistant activities include but are not restricted to, computer entry of data extracted from charts or collection of charts from the chart room. The presence of an assistant does not replace the requirement for a full time registrar. Assistants to the registrar may be of any employment status including voluntary. For this reason it is important to assure that job training is adequate to cover the position, particularly with regard to confidentiality of patient information and quality improvement. Other areas of job training should be tailored to the position.

As a program expands to include more than one registrar, the educational requirements are the same as for the original position. This is due to the fact the each registrar will be performing the same task, with the same key elements.

Critical Deficiency:

- No trauma registrar.
- No job description for registrar position.

Non Critical Deficiency:

- There is a registrar, but time allotted to position is insufficient for tasks expected.
- Education insufficient or not up to date.

Non Critical Deficiency: (cont'd)

- Assistants are used to supplement registrar position but training insufficient for expectations.

C. Trauma Team:			
1. Trauma Team Response:			
a. There must be a clearly delineated trauma team response to the arrival of the patient with suspected or known major trauma in the Emergency Department 24 hours a day.	**E**	**E**	**E**

Trauma team response:
The hallmark of a trauma service is the trauma team response. This must be described in the trauma program manual and demonstrated on chart review for any site visit type other than provisional. The goal to the trauma team response is to expedite the diagnosis and management of injuries for the trauma patient.

The description of the team response in the trauma program manual must include criteria for response, notification of impending patient arrival to team members, who respond, target criteria for timeliness, team

member roles and any actions expected as a result of trauma notification (for example: hold an operating room open).

Every center must have a procedure for a full team response. This means that all team members including the surgeon are included and every effort is made to assure that the team is available ***at the bedside*** at the time of patient arrival. In addition, an operating suite must be available at short notice and arrangements include the rapid access to red blood cells for transfusion. The assumption is that the critically injured patient may require very rapid intervention for stabilization and surgical intervention for definitive care of injuries. In the single level response model, it is a criteria when calling the team, that the response must be broad in order to have the needed resources available to all patients requiring emergent interventions. For this reason, the single level response results in over triage and heavy utilization of resources.

While not required, many hospitals choose to use a tiered response to trauma. The tiered response includes the full team at the highest level and partial team response at one or more additional levels. When a tiered response is used, the trauma program manual must describe each level of response and criteria qualifying for the response level. While a tiered response addresses the needs of less severely injured patients and minimizes over utilization of resources, more oversight is necessary to assure that the effect is not diluted by a pattern of calling a lower level of response than necessary.

The site review team will review the trauma program manual, patient records, and the quality improvement program to determine the following:

- Alerts occur as described in the trauma program manual.
- Criteria are appropriate.
- Criteria address the needs of severely injured patients.
- That the full team response is timely.
- Tiered response is used as indicated in the trauma program manual.

While deviation from the description of the alert system in the trauma program, manual may occur from time to time, the site team will be evaluating the program for patterns of deviation especially in instances where the pattern is not identified by the institution's PI plan and addressed through the plan. Examples of such patterns include, but are not restricted to:

- Delay in calling a full team response until after the patient is evaluated.
- Severely injured patients or patients requiring emergent surgery not receiving full team response.
- Frequent need for upgrades in tiered response.
- Delay in arrival of team members for full team response.
- Mortality or morbidity attributable due to delays in team arrival.
- PI plan does not identify and address issues in team response.

Critical Deficiency:

- Trauma team response not identified in the facilities trauma program manual or communicated to team members.
- Response is as described in the trauma program manual, but criteria result in morbidity and mortality attributable to under triage – not addressed by PI program.

- Severely injured patients or patients requiring emergent surgical intervention not included in full team response- not addressed by PI program.
- Written procedure for team response is appropriate, but implementation results in under triage of critically injured patients and is not addressed by PI program.

Non Critical Deficiency:

- Consistent deviation from trauma team response as described in trauma program manual.
- Patterns of delay in full team response and not resulting in critical deficiency.

Additional Clinical Capabilities

The purpose of the sections on clinical capabilities is to ensure that the trauma center is capable of providing the services required for its level of designation, as denoted by being marked as essential and being able to manage corresponding injury types on a full time basis.

The hospital must offer each of the relevant services, although dedicated call to the trauma center is not necessary and the specialist need not be immediately available. A 24 hour call schedule for the service is NOT necessary. The hospital has the flexibility of organizing a plan to manage corresponding injuries on site in a manner best suited to staff and resources. For example, in the absence of a 24 hour call schedule for ENT the center may have a plan for immediate coverage of maxillofacial trauma patients with a rotating call schedule. PI processes should be in place to oversee the plan and to identify any potential problems. The plan may NOT involve transfer of patients with the injury type of concern.

III. Additional Clinical Capabilities:			
A. Surgical:			
1. Cardiac Surgery	**E**	**O**	**O**
2. Thoracic Surgery	**E**	**E**	**O**
3. Orthopedic Surgery	**E**	**E**	**E**
4. Pediatric Surgery	**E**	**O**	**O**
5. Hand Surgery	**E**	**O**	**O**
6. Microvascular/Replant Surgery	**E**	**O**	**-**
7. Plastic Surgery	**E**	**E**	**O**
8. Maxillofacial Surgery	**E**	**E**	**O**
9. Ear, Nose & Throat Surgery	**E**	**E**	**O**
10. Oral Surgery	**E**	**O**	**O**
11. Ophthalmic Surgery	**E**	**E**	**O**
12. Gynecological Surgery/Obstetrical Surgery	**E**	**E**	**O**

VI. Performance Improvement Program:			
A. Organized performance improvement program (PI) to examine the care of the injured patient within the facility, that looks towards improving outcome, decreasing complications and improving efficiency. The process should clearly document the PI process, action plan and resolution of the issue.	**E**	**E**	**E**
1. Demonstrate relationship between PI outcomes and new or revised clinical protocols.	**E**	**O**	**O**
2. Expansion of PI program to include regional trauma systems.	**O**	**O**	**O**
B. Performance improvement program should follow state recommended audit filters at minimum.	**E**	**E**	**E**
1. Participates in the creation of institutional/regional based audit filters as identified by the institution/regional PI committees.	**O**	**O**	**O**
C. The hospital shall set a time that the trauma surgeon has to respond to a full trauma team response. This policy should be available to be reviewed during the site review team visit.	**E**	**E**	**E**
D. Applying outcomes/benchmarking activity.	**E**	**E**	**E**
E. Participation in the Statewide Trauma Registry as mandated by the Code of Virginia. Data must be submitted to Trauma Registry within 30 days from the end of a quarter and includes: i. patients with ICD9-CM codes of 348.1, 800.0 – 959.9, 994.0 and 994.1, excluding 905-909 (late effect injuries), 910-924 (blisters, contusions, abrasions and insect bites), 930-939 (foreign bodies) ii. Only those patients that were admitted to the facility are required to be reported. Includes admissions for observation (not ER observation unless held in the ER due to no inpatient bed availability). iii. patients transferred from one hospital to another because of acute trauma (patient may be transferred directly from the Emergency Department or from an inpatient unit). iv. victims of acute trauma that die within the hospital, Including, the emergency department and DOA's. *hospitals may over report within these ICD9 codes if desired for internal reporting.	**E**	**E**	**E**
1. Compliance with section E above on a quarterly basis.	**E**	**E**	**E**
a. Utilization of State Registry/NTDB for purposes of institutional/Regional/State Research, Benchmarking for performance improvement and or Injury Prevention Programs. For mature trauma centers (by second verification visit) becomes a minimal standard.	**O**	**O**	**O**
F. A forum, including the Trauma Medical Director, E.D. Director, Trauma Coordinator, designee from Trauma subspecialties (neurosurgery, orthopedics) as specific issues present for multidisciplinary review of care of the injured patient including policies, procedures, system issues, and outcomes may include pre-hospital, nursing, ancillary personnel, a hospital administrator and physicians involved in trauma care. (The forum in G, below, may be combined with this meeting)	**E**	**E**	**E**
1. 50% attendance by committee members (or designee) at multi-disciplinary review of care meetings.	**E**	**E**	**E**

Performance Improvement (QA/QI)

The presence of a performance improvement program is critical to the existence of the trauma center. While every hospital participates in performance improvement, not every performance improvement program addresses the needs of a trauma service. Site reviewers will be looking for a program specifically oriented to trauma patients; one that covers multidisciplinary issues as well as all phases of trauma care from pre-hospital care to rehabilitation. The medical director(s) and trauma nurse coordinator(s) must have oversight for the program.

A written performance improvement plan should be provided and should describe the following:

- Who has the authority and responsibility to implement the plan.
- Selection of audit filters.
- Management of unique events or reports.
- Review of information and reports received.
- Routing of pre-hospital care, nursing, and medical staff issues.
- Means of implementing change.
- Documentation with regard to implementing change.
- Maintenance and review of PI plan.

Every center must audit its trauma deaths. In addition, the center should include audit filters based on its previous experience, those filters requested by the TSO&MC and filters designed to identify potential problems. Because each center is different, a list of audit filters for a center will be unique for that center. Process filters which evaluate whether or not a process is observed are valuable when developing a new trauma service or setting up a procedure for a currently existing service. Outcome filters describe the results of trauma care. While death is certainly the ultimate outcome filter, a performance improvement plan should address other outcomes such as disability at discharge or time to definitive procedures. Experienced trauma centers are expected to place increasing emphasis on outcome oriented audit filters; their PI plan and program and are judged accordingly.

Appendix A

VIRGINIA TRAUMA CENTER DESIGNATION/VERIFICATION APPLICATION QUESTIONNAIRE

Please complete this questionnaire in its entirety. All answers should directly follow the questions. The questionnaire should be submitted along with your application for designation/verification. This questionnaire is available electronically from The Office of EMS' Trauma/Critical Care Coordinator.

Name of Hospital _____

Hospital Address _____

City _____ State _____ Zip _____

PURPOSE OF SITE REVIEW

A. Type of review:

- ○ Designation
- ○ Verification

Level of Review

- ○ Level I
- ○ Level II
- ○ Level III

B. Date of most recent review: _____

YOUR LAST REVIEW

1. Describe the improvements directed toward previously defined criterion deficiencies.

2. Describe any addition or removal of hospital capabilities since your last site review.

3. Describe any organizational or administrative changes at your facility since your last site review.

I. INSTITUTIONAL ORGANIZATION

a. Do you have a designated trauma service?

b. Do you have a call list for surgeons who respond?

c. What is the number of surgeons on the list?

d. Do you require that the surgeon who is called to come in for a critical trauma patient respond physically within a specified time?

e. What is the length of time?

f. How do you assure that the general surgeon is in-hospital prior to the arrival of the patient?

g. When a critically injured patient arrives at your hospital, who takes direct charge?

h. Do you provide CME for staff physicians, nurses and allied health personnel?

i. Describe the trauma service including how the trauma medical director oversees all aspects of the multidisciplinary care from the time of injury through discharge.

k. Provide a narrative job description of the trauma service director.

l. Is the trauma nurse coordinator a full or part time position? If not full time, please describe how the trauma service is major focus of their duties.

m. Describe the criteria you use and who has the authority to activate a trauma team response.

n. Describe the personnel on the trauma team for each level of response.

II. Hospital Departments/Divisions/Sections

a. Do you have call lists for the surgical specialties?

b. Do you have a specific length of time for other specialties to respond to the call?

c. What is that time period?

III. Additional Clinical Capabilities

IV. Clinical Qualifications

a. What special qualifications do your emergency physicians have to provide critical management of the acutely injured?

b. Is there a training program for critical care nurses?

V. Facilities/Resources/Capabilities

a. Do you have operating room staff in-hospital 24-hours/day?

c. Who provides in-hospital physician supervision of the recovery room/lCU environment?

d. Is there a hospital-to-field communication system or network? Describe.

e. Who interprets radiographs after hours?

VI. Performance Improvement Program

a. Is there a death audit for trauma deaths?

b. Who audits the deaths that occur in the Emergency Department?

c. Describe your PI program including how issues are identified and tracked, include copies of your tracking sheets.

d. How does the PI program affect the way trauma care is rendered?

VII. Outreach Program

a. Identify the number and level of other trauma centers in your primary and secondary catchment areas and describe their relationships to your centers.

b. Describe your hospital's capability to respond to hazardous materials (radioactive, chemical, biological and other).

c. Describe your hospital's participation in the regional trauma and disaster planning.

d. Describe the EMS system in your primary and secondary catchment areas.

e. Briefly describe the EMS governing body; include description of medical leadership. Include EMS involvement in the regional trauma committee.

f. Detail your trauma center's participation in prehospital training and performance improvement.

g. Describe the Medevac support services available in your primary and secondary catchment areas.

h. Describe how your hospital provides trauma specific education to physicians, nurses and prehospital providers**.**

VIII. Injury Prevention

a. Describe your injury prevention program.

IX. Hospital Documents

a. Do you have treatment protocols for the care of the trauma patients?
If so, please attach the protocols to this document.

b. Attach a Trauma Service organizational chart.

c. Do you have a bypass or divert protocol? If so describe the reasons for bypass/divert and how many times you went on divert or bypass in the previous year.

X. Institutional Commitment

a. Describe, in narrative, the commitment of your administration to trauma.

Appendix B

VIRGINIA TRAUMA CENTER DESIGNATION/VERIFICATION APPLICATION

Hospital Capabilities

Please fill in with your facilities capabilities in its entirety. This form should be submitted along with your application for designation/verification. This form is available electronically from The Office of EMS' Trauma/Critical Care Coordinator.

Name of Hospital _____

Hospital Address _____

City _____ State _____ Zip _____

Hospital Capabilities	**Total**
Number of Licensed Beds In Facility	
Emergency	
Total Annual ED Volume (last 12 months)	
Number of Emergency Physicians	
Nursing Staff Demographics **Emergency Department**	
RN's	
LPN/LVN's	
Assistants	
Average Years Experience	
CCRN/CEN	
ACLS	
PALS	
TNCC	
Other	
Trauma Service	
Number of Trauma Team Responses (last 12 months)	
Highest Tiered Response	
Lowest Tiered Response	
Number Of Admissions To Trauma Service (Last 12 Months)	
Blunt Trauma	%
Penetrating Trauma	%
Burns	%
Other	%
Number of patients by ISS	

0 - 9	
15-Oct	
16 - 24	
≥ 25	
Number of Trauma Admission To Non Surgical Services	
Number of Trauma Surgeons Taking Active Call	

Critical Care	
Number of Critical Care Beds In Facility	
Nursing Staff Demographics **Intensive Care Units**	
RN's	
LPN/LVN's	
Assistants	
Average Years Experience	
Patient Ratio	**:**
CCRN/CEN	
ACLS	
PALS	
TNCC	
Other	
Pediatrics	
Nursing Staff Demographics **Pediatric ICU**	
RN's	
LPN/LVN's	
Assistants	
Average Years Experience	
Patient Ratio	**:**
CCRN/CEN	
ACLS	
PALS	
TNCC	
Other	
Burn	
Number Of Burn Beds	
Burn Transfers In (last 12 months)	
Burn Transfers Out (last 12 months)	
Nursing Staff Demographics **Burn Unit**	
RN's	
LPN/LVN's	
Assistants	
Average Years Experience	

Patient Ratio	**:**
CCRN/CEN	
ACLS	
PALS	
TNCC	
Other	
Trauma Registry	
Trauma Registry Application Used	
Number Of Patients Reported To State Registry (last 12 mos.)	

VIRGINIA
LEVEL I TRAUMA CENTER
CHECK LIST

Name of Hospital: _____

Name of Person Completing Checklist: _____

Title: _____Contact Info:_____

Hospital Mailing Address: _____

City: _____ State: _____ Zip Code: _____

Return to Office of Emergency Medical Services
Attention: Trauma/Critical Care Coordinator
P.O. Box 2448
Richmond, Virginia 23218

I. Institutional Organization

A. Trauma Program

( ) 1. Mission statement emphasizing continuous performance improvement in the management of the trauma patient. **E**

( ) 2. A recognizable program within the hospital which has a surgeon as its director/physician in charge. **E**

( ) 3. Support of the facilities' Board of Directors. (Board of Directors should be notified of applications for trauma designation, verification and approval of the Board of Health after a site review.) **E**

( ) 4. Administration supportive of Trauma Program. **E**

( ) 5. Evidence of an annual budget for Trauma Program. **E**

B. Trauma Services:

1. Trauma Program Medical Director:

( ) a. Board certified/eligible general surgeon. May have emergency medicine physician as Co-Director. **E**

( ) b. Minimum three years experience on trauma service or trauma fellowship training **E**

( ) c. Participates in regional and national trauma organizations. **E**

( ) d. Involved in trauma research and includes the publication of results and presentations. **E**

( ) e. Actively involved in providing care to patients with life threatening or urgent injuries. **E**

( ) f. Oversees all aspects of multidisciplinary care from the time of injury to discharge. **E**

( ) g. Current ATLS provider or instructor. **E**

( ) h. Will have 30 hours of category I trauma/critical care CME every three years and attend one national meeting whose focus is trauma or critical care. **E**

i. Will have 30 hours of category I trauma/critical care CME every three years and/or attend one national meeting whose focus is trauma or critical care. **Ø**

( ) j. Attends more than one national meeting over three year period. **O**

( ) k. The Trauma Program Medical Director will provide an annual meeting and/or a self learning packet/web based learning program. All of the following shall receive this training:

- All full and part time surgeons taking trauma call.
- The Trauma Program Manager/Trauma Coordinator.
- Nurse practitioners and physicians assistants affiliated with the trauma program.
- All full and part time emergency department physicians who may be caring for trauma alert patients in the Emergency Department. **E**
- All nurse practitioners and physicians assistants who may be caring for trauma alert patients in the Emergency Department.

The Trauma Program Medical Director will provide the following updates during this meeting:

i. Highlights from national meetings and other continuing education to include a discussion of any changes applicable to the current guidelines and practice.

ii. A review, including updated information from ATLS.

OR

( ) Each surgeon, emergency physician, nurse practitioner or physicians assistant participating/taking call in the service or could possibly be caring for trauma alert patients in the emergency department must complete 30 Category I CME's in trauma/critical care across the three year verification period or 20 across the two year designation period. Updating ATLS may be included in these CME's
*The facility must choose between providing an annual update or CME tract to educate physician staff.

2. Trauma Nurse Coordinator/Trauma Program Manager:

( ) a. Must have dedicated full time TNC/TPM **E**

b. Must have a TNC/TPM, may be a part-time position, though the trauma program shall be a major focus of their job description. **Ø**

( ) c. An identified TNC/TPM with overall management responsibilities for the trauma program. **E**

( ) d. Defined job description and organizational chart delineating the TNC/TPM role and responsibilities. **E**

( ) e. Must be a Registered Nurse. **E**

( ) f. The TNC/TPM, in addition to being a Registered Nurse, must possess experience in Emergency/Critical Care Nursing. **E**

( ) g. 30 CEU's/contact hours required per three year verification cycle, of which 50%, must be via an extramural source. **E**

( ) h. The TNC/TPM will attend one national meeting within the three year verification or two year initial designation period. **E**

( ) i. In addition to the national meeting in, I.B.2.h, attends other national meetings within the three year verification or two year designation. **O**

3. Trauma Registrar:

( ) a. Must be a minimum of one full FTE dedicated to the Trauma Registry. **E**

b. A minimum of a part time trauma registrar. **Ø**

( ) c. Trauma registrars must attend 24 hours registry or trauma critical care contact hours/education hours over three years. **E**

C. Trauma Team:

1. Trauma Team Response:

( ) a. There must be a clearly delineated trauma team response to the arrival of the patient with suspected or known major trauma in the Emergency Department 24 hours a day. **E**

2. Trauma Surgeon:

( ) a. A Trauma Surgeon must meet the patient in the ED upon arrival. A PGY4 or PGY5 general surgery resident capable of assessing emergent situations, providing control and leadership of the care of the trauma patient may meet this requirement. In the event that this requirement is provided by a resident, the trauma surgeon must be available in a timely matter. **E**

( ) b. The emergency physician is a designated member of the trauma team and may direct resuscitation and care of the patient until the arrival of the trauma team leader. A senior level emergency medicine resident may fulfill this function provided there is an attending emergency medicine physician present in the ED **E**

( ) c. Trauma/General Surgeons participating in the trauma program and taking active call must be dedicated to the facility while on trauma call and show active participation in the trauma program. **E**

( ) d. Trauma/general surgeons participating in the trauma program and taking active call must have completed ATLS, successfully, at least once in the past. **E**

( ) **3. Trauma Related Surgical Specialties:** Promptly available as needed **E**

4. Anesthesiology:

( ) a. Anesthesiologist in hospital 24 hours a day. (refer to Sec. II.D.1) E

b. Anesthesiology must be on call and readily available 24 hours a day. (refer to Sec. II.D.2) Ø

( ) c. Anesthesiologist must be present for all emergent operative procedures on major trauma patients. (refer to Sec. II.D.3) E

5. Minimum Physician Coverage:

( ) a. A minimum of two attending level physicians must be present for the arrival of full trauma team alert patients. These physicians must be an anesthesiologist, EM physician, or general surgeon. A qualified general surgeon is expected to participate in major therapeutic decisions and be present in the emergency department for major resuscitations and at operative procedures in all seriously injured patients. E

b. A minimum of one attending level physician must be present for the arrival of trauma team alert patients. This physician must have the capability to manage the initial care of the majority of injured patients and have the ability to transfer patients that exceed their resources to an appropriate level center. Ø

II. Hospital Departments/Divisions/Sections:

A. General Surgery:

( ) 1. Clinical capabilities in general surgery with two separate posted call schedules. One for trauma, one for general surgery. In those instances where a physician may simultaneously be listed on both schedules, there must be a defined back-up surgeon listed on the schedule to allow the trauma surgeon to provide care for the trauma patient. The trauma service director shall specify, in writing, the specific credentials that each back-up surgeon must have. These, at a minimum, must state that the back-up surgeon has surgical privileges at the trauma center and is boarded or eligible in general surgery (with board certification in general surgery within five years of completing residency). **In house 24 hours a day**. A PGY4 or PGY5 capable of assessing emergent situations in their respective specialties may fulfill this requirement. They must be capable of providing surgical treatment immediately and provide control and leadership of the care of the trauma patient.) E

2. Clinical capabilities in general surgery with two separate posted call schedules. One for trauma, one for general surgery. In those instances where a physician may simultaneously be listed on both schedules, there must be a defined back-up surgeon listed on the schedule to allow the trauma surgeon to provide care for the trauma patient. The trauma program director shall specify, in writing, the specific credentials that each back-up surgeon must have. These, at a minimum, must state that the back-up surgeon has surgical privileges at the trauma center and is boarded or eligible in general surgery (with board certification in general surgery within five years of completing residency). On Call. Trauma surgeon or PGY4/ PGY5 capable of assessing emergent situations in their respective specialties may fulfill this requirement. They must be capable of providing surgical treatment immediately and provide control and leadership of the care of the trauma patient.) Ø

3. When the trauma surgeon is not in house, the trauma surgeon should be present in the Emergency Department at the time of arrival of the patient. When sufficient prior notification has not been possible, an emergency department physician will immediately initiate the evaluation and resuscitation. Definitive surgical care must be instituted by the trauma surgeon in a timely fashion. Ø

( ) 4. The hospital shall establish a policy detailing the expected amount of time for the trauma surgeon to arrive from notification to arrival, this time shall not exceed 30 minutes. Selection of the interval will be based on patient outcome data. E

B. Neurological Surgery:

( ) 1. An Attending Neurosurgeon must be promptly available. The in-house requirement may be fulfilled by an in-house neurosurgery resident, or a surgeon/designee who has special competence, as judged by the Chief of Neurosurgery, in the care of patients with neural trauma, and who is capable of initiating diagnostic procedures. E

2. An Attending Neurosurgeon must be promptly available. This requirement may be fulfilled by a neurosurgery resident, or a surgeon/designee who has special competence, as judged by the Chief of Neurosurgery, in the care of patients with neural trauma, and who is capable of initiating diagnostic procedures. This may be on-call from out side of the hospital. Ø

( ) 3. If a neurosurgeon is responsible for more than one facility at the same time, they must have a back up schedule. E

4. If an attending neurosurgeon is not dedicated to the Level II Trauma Center, the center must have a back up call list OR the center must demonstrate no more than 24 emergency neurosurgical procedures per year AND the center must provide a neuro-trauma diversion plan. Ø

C. Emergency Medicine:

( ) 1. The emergency department physician must be a recognized member of the trauma team. and be represented on the facilities trauma committee. **E**

( ) 2. The Emergency Medical Director or their designee will have 30 hrs of Category I CME every three years and attend one national meeting with some content in trauma or critical care. **E**

( ) 3. The Emergency Medical Director or designee will maintain a current ATLS instructor or participant certification. **E**

D. Anesthesiology:

( ) 1. Anesthesiologist in hospital 24 hours a day. (Requirements may be filled by anesthesia residents, CRNA's capable of assessing emergent situations in trauma patients and providing any indicated treatment. Anesthesia personnel should be capable of providing anesthesia service for surgical trauma cases including major vascular, neurosurgical, pediatric, orthopedic, thoracic, ENT and other in-house surgical cases. If residents or CRNA's are used, a staff anesthesiologist must be present in the OR suite during surgery. Training and experience in both invasive and non-invasive monitoring is essential). **E**

2. Anesthesiology. (anesthesia personnel need not be in house 24 hours a day, but the Trauma Service should ensure that anesthesia personnel can be present in the emergency room at the time of arrival of the trauma alert patient. When sufficient prior notification has not been made possible, a designated member of the trauma team will immediately initiate the evaluation and resuscitation. Requirements must be filled by anesthesia personnel capable of assessing emergent situations in trauma patients and providing any indicated treatment. Anesthesia personnel should be capable of providing anesthesia service for surgical trauma cases including major vascular, neurosurgical, pediatric, orthopedic, thoracic, ENT and other in-house surgical sub-specialties involved in trauma cases. If residents or CRNA's are used, a staff anesthesiologist must be present in the OR suite during surgery. Training and experience in both invasive and non-invasive monitoring are essential). **Ø**

3. Anesthesiology. On call and promptly available from in or out of hospital. (Requirements must be filled by anesthesia personnel capable of assessing emergent situations in trauma patients and providing any indicated treatment. Anesthesia personnel should be capable of providing anesthesia service for surgical trauma cases including major vascular, neurosurgical, pediatric, orthopedic, thoracic, ENT and other in-house surgical sub-specialties involved in trauma cases. If residents or CRNA's are used, a staff anesthesiologist must be present in the OR suite during surgery. Training and experience in both invasive and non-invasive monitoring is essential). **ø**

III. Additional Clinical Capabilities:

A. Surgical:

( )	1. Cardiac Surgery	**E**
( )	2. Thoracic Surgery	**E**
( )	3. Orthopedic Surgery	**E**
( )	4. Pediatric Surgery	**E**
( )	5. Hand Surgery	**E**
( )	6. Microvascular/Replant Surgery	**E**
( )	7. Plastic Surgery	**E**
( )	8. Maxillofacial Surgery	**E**
( )	9. Ear, Nose & Throat Surgery	**E**
( )	10. Oral Surgery	**E**
( )	11. Ophthalmic Surgery	**E**
( )	12. Gynecological Surgery/Obstetrical Surgery	**E**

B. Non-surgical: (available)

( )	1. Cardiology	**E**
( )	2. Pulmonology	**E**
( )	3. Gastroenterology	**E**
( )	4. Hematology	**E**
( )	5. Infectious Disease	**E**
( )	6. Internal Medicine	**E**
( )	7. Nephrology	**E**
( )	8. Pathology	**E**
( )	9. Pediatrics	**E**
( )	10. Psychiatry	**E**
( )	10. Radiology	**E**
( )	11. Interventional Radiology	**E**

IV. Clinical Qualifications:

A. General/Trauma Surgeon's:

( ) 1. Board certified/eligible in general surgery. **E**

( ) 2. Must meet the educational requirements in I.B.1.k. **E**

( ) 3. Successful ATLS Course completion at least once. **E**

B. Emergency Medicine:

( ) 1. Board certified/eligible in emergency medicine (Exceptions may be made in rare instances based upon long term practice in emergency medicine). **E**

( ) 2. Must meet the educational requirements in I.B.1.k. **E**

( ) 3. Emergency department physicians must maintain current ATLS, **if not** boarded in emergency medicine. **E**

C. Neurosurgery:

( ) 1. Board certified within five years of completing residency successfully **E**

( ) 2. 10 hours of CME per year in neuro trauma. **O**

( ) 3. Must have successfully completed an ATLS course once. **O**

D. Orthopedic Surgery:

( ) 1. Board certified within five years of completing residency successfully. **E**

( ) 2. 10 hours of CME per year in skeletal trauma. **O**

( ) 3. Must have successfully completed an ATLS course once. **O**

E. Trauma Nursing:

( ) 1. All ED, OR, ICU, PACU and acute care unit staff that consistently care for the severely injured patient will receive annual update information provided by the TNC/TPM. This education may be provided by the representative/designee from each area listed here. The annual update information must include: **E**

i. Highlights from national meetings.

ii. Updates to TNCC, ATCN, CATN, ENPC and other continuing education.

OR

All nursing staff who participate in the trauma team response, or who primarily care for the injured patient in the ICU, OR, PACU, ED or surgical trauma units shall have a minimum eight hours trauma/critical care CME annually. This requirement may be filled by successfully completing TNCC, ATCN, CATN, ENPC.

( ) 2. All nursing staff caring for trauma patients have documented knowledge and skill in trauma nursing (trauma specific orientation, skills checklist). **E**

3. Documentation of specific orientation and continuing education for pediatric and burn care if these patients are regularly admitted to the trauma center.

4. >50% of Level III nursing staff who participate in the trauma team response must successfully complete a TNCC, ATCN course or participate in a resuscitation/assessment skill based educational program involving the Level I or II trauma program manager within one year of beginning trauma team responsibilities.

V. Facilities/Resources/Capabilities:

A. Emergency Department:

1. Personnel:

( ) a. Designated physician director/chairman (see clinical qualifications under Section II.C **E**

( ) b. 24 hour per day staffing by physicians physically present in the emergency department that meet the standard in Section IV. B **E**

( ) c. RN's, LPN/LVN's and nursing assistants/technicians in adequate numbers in the initial resuscitation area based on acuity and trauma team composition. **E**

( ) d. A minimum of two RN's per shift functioning in the trauma resuscitation area that possess trauma nursing training. **E**

( ) e. A written provision/plan for the acquisition of additional staffing on a 24 hour basis to support units with increased patient acuity, multiple emergency procedures and admissions. **E**

( ) f. Each nursing unit must have a copy of their staffing plan for review during the site visit. **E**

( ) g. A written protocol for the expectations and responsibilities of the trauma nurse and other team members during trauma resuscitations. **E**

( ) h. Nursing documentation for trauma patients is on a trauma flow sheet or electronic medical record equivalent. **E**

2. Emergency Department Resuscitation Equipment:

( ) a. For trauma centers caring for pediatric patients, there shall be equipment corresponding to the adult equipment, appropriate to age and size. There shall be information on pediatric medication dosing with this equipment. **E**

( ) b. Broselow Tape **E**

( ) c. Airway control & ventilation equipment (laryngoscopes with a variety of straight and curved blades, endotracheal tubes of all sizes, bag valve masks and methods to continually provide supplemental Oxygen) **E**

( ) d. Suction devices in adequate numbers to be able to care for the multi system trauma patient. **E**

( ) e. End Tidal CO2 detector to confirm tracheal placement of ETT. **E**

( ) f. Bedside monitor with central monitoring capabilities to include: ECG, Pulse Oximetry, central venous pressure monitoring. **E**

( ) g. Cardiac Monitor immediately available with capabilities to include: ECG, Pacing, external & internal defibrillation. **E**

( ) h. Intravenous fluids and administration devices to include large bore access and intraosseous devices (adult & pediatric) **E**

( ) i. Thermal control equipment for warming blood & IV fluid. **E**

( ) j. Method of rapid IV fluid administration must be able to infuse warmed IV fluid and warmed blood. **E**

( ) k. Arterial Catheters. **E**

( ) l. Sterile surgical sets/trays to include: airway control/cricothyrotomy, thoracotomy, vascular access, chest tube insertion, peritoneal lavage and central line access. **E**

( ) m. Thermal control equipment for cooling/warming patients. **E**

( ) n. Gastric catheters. **E**

( ) o. Skeletal traction devices. **E**

( ) p. Skeletal traction device for providing cervical traction. **E**

( ) q. 24 hour per day x-ray capability. **E**

( ) r. Sonography (FAST capability). **O**

( ) s. Doppler capability. **E**

( ) t. Two way radio communication linked with EMS transport units. **E**

B. Operating Suite:

( ) 1. Immediately available 24 hours per day. **E**

2. Personnel:

( ) a. 24 hour per day immediate availability of in-house staffing. **E**

( ) b. Personnel available 24 hours per day in-house or on-call and available in a timely manner. **Ø**

( ) c. Operating room adequately staffed in-house 24 hours per day. There should be a second on-call team promptly available when the in-house team is participating in an operative case. **E**

3. Operating Room Resuscitation Equipment:

( ) a. For trauma centers caring for pediatric patients, there shall be equipment corresponding to the adult equipment, appropriate to age and size. There shall be information on pediatric medication dosing with this equipment. **E**

( ) b. Cardiopulmonary bypass capability. **E**

( ) c. Operating microscope. **E**

d. Thermal control equipment

( ) i. For patients **E**

( ) ii. For blood & IV fluids **E**

( ) e. 24 hour per day x-ray capability, including C-Arm image intensifier. **E**

( ) f. Endoscopes and bronchoscopes. **E**

( ) g. Rapid infuser system **E**

( ) h. Craniotomy instruments **E**

( ) i. Capability of fixation of long bone and pelvic fractures. **E**

C. Postanesthesia Recovery Room or Surgical Intensive Care:

1. Personnel:

( ) a. 24 hour per day (in-house or on-call) staffing by RN's **E**

2. Equipment for patients of all ages, to include:

( ) a. capability for resuscitation and continuous monitoring of temperature, hemodynamics & gas exchange **E**

b. Thermal control equipment:

( ) i. for patients. **E**

( ) ii. for IV fluids, blood and blood products. **E**

( ) c. rapid infuser. **E**

( ) In the event that patients are boarded in the PACU as ICU overflow patients, then the equipment listed in section V.D.2 must be available. **E**

D. Intensive/Critical Care Unit:

1. Personnel:

( ) a. Designated surgical director or co-director. **E**

( ) b. Designated medical director or co-director. **E**

( ) c. Registered Nurses, educated in trauma care, should have a patient ratio of not more than two patients per RN. **E**

( ) d. Physician on duty in the ICU 24 hours per day or immediately available from within the facility as long as this physician is not the sole on call MD for the emergency department. **E**

e. Physician on duty in the ICU 24 hours per day or immediately available from within the hospital (which may be a physician who is the sole physician on call for the emergency department). **Ø**

2. Intensive Care Unit Equipment:

( ) a. For trauma centers caring for pediatric patients, there shall be equipment corresponding to the adult equipment, appropriate to age and size. There shall be information on pediatric medication dosing with this equipment. **E**

( )	b. Airway control & ventilation equipment (laryngoscopes with a variety of straight and curved blades, endotracheal tubes of all sizes, bag valve masks and methods to continually provide supplemental Oxygen)	E
( )	c. Oxygen source with concentration controls.	E
( )	d. Cardiac emergency cart.	E
( )	e. Temporary transvenous pacer.	E
( )	f. Bedside monitor with central monitoring capabilities to include: ECG, Pulse Oximetry, pressure monitoring abilities (ICP, Venous & Arterial).	E
( )	g. Cardiac Monitor immediately available with capabilities to include: ECG, Pacing, external & internal defibrillation.	E
( )	h. Mechanical ventilator.	E
( )	i. Patient weighing devices.	E
( )	j. Pulmonary function measuring device.	E
( )	k. Temperature control devices for patients	E
( )	l. Rapid fluid infuser capability.	E
( )	m. Intracranial pressure monitoring device	E
( )	n. Capability to perform blood gas measurements, hematocrit levels & chest x-ray studies.	E

F. Radiological Services: (available 24 hours per day)

( )	1. 24 hour per day in-house radiology technician.	E
( )	2. X-ray interpretation by radiologist available 24 hours per day.	E
( )	3. Angiography.	E
( )	4. Sonography.	E
( )	5. Computed Tomography Scanning (CT)	E
( )	6. 24 hour per day in-house CT Technologist.	E
	7. CT Technologist available within 30 minutes of notification or documentation that procedures are available within 30 minutes.	Ø
( )	8. Magnetic Resonance Imaging (MRI).	E
( )	9. Resuscitation equipment to include airway management and IV therapy.	E

G. Clinical Laboratory Service: (to be available 24 hours/day)

( )	1. Standard analysis of blood, urine, and other body fluids, including micro sampling when appropriate.	E
( )	2. Blood typing & cross-matching.	E
( )	3. Coagulation studies.	E
( )	4. Comprehensive blood bank, or access to a community central blood bank with storage facilities.	E
( )	5. Blood gas & ph determination abilities.	E
( )	6. Microbiology abilities.	E

VI. Performance Improvement Program:

( ) A. Organized performance improvement program (PI) to examine the care of the injured patient within the facility that looks towards improving outcome, decreasing complications and improving efficiency. The process should clearly document the PI process, action plan and resolution of the issue. **E**

( ) 1. Demonstrate relationship between PI outcomes and new or revised clinical protocols. **E**

( ) 2. Expansion of PI program to include regional trauma systems. **O**

( ) B. Performance Improvement program should follow state recommended audit filters at minimum. **E**

( ) 1. Participates in the Creation of institutional/regional based audit filters as identified by the institution/regional PI committees **O**

( ) C. The hospital shall set a time that the trauma surgeon has to respond to a full trauma team response. This policy should be available to be reviewed during the site review team visit. **E**

( ) D. Applying outcomes/benchmarking activity. **E**

( ) E. Participation in the Statewide Trauma Registry as mandated by the Code of Virginia. Data must be submitted to Trauma Registry within 30 days from the end of a quarter and includes:

i. patients with ICD9-CM codes of 348.1, 800.0 – 959.9, 994.0 and 994.1, excluding 905-909 (late effect injuries), 910-924 (blisters, contusions, abrasions and insect bites), 930-939 (foreign bodies)

ii. Only those patients that were admitted to the facility are required to be reported. Includes admissions for observation (not ER observation unless held in the ER due to no inpatient bed availability). **E**

iii. patients transferred from one hospital to another because of acute trauma (patient may be transferred directly from the Emergency Department or from an inpatient unit).

iv. victims of acute trauma that die within the hospital, Including, the emergency department and DOA's

*hospitals may over report within these ICD9 codes if desired for internal reporting

( ) 1. Compliance with section E above on a quarterly basis. **E**

( ) a. Utilization of State Registry/NTDB for purposes of institutional/Regional/State Research, Benchmarking for performance improvement and or Injury Prevention Programs. For mature trauma centers (by second verification visit) becomes a minimal standard. **O**

( ) F. A forum, including the Trauma Medical Director, E.D. Director, Trauma Coordinator, designee from Trauma subspecialties (neurosurgery, orthopedics) as specific issues present for multidisciplinary review of care of the injured patient including policies, procedures, system issues, and outcomes may include pre-hospital, nursing, ancillary personnel, a hospital administrator and physicians involved in trauma care. (The forum in G, below, may be combined with this meeting) **E**

( ) 1. 50% attendance by committee members (or designee) at multi-disciplinary review of care meetings. **E**

( ) G. The hospital will have a structured peer review committee that must have a method of evaluating trauma care. This committee must meet at least quarterly and include physicians representing pertinent specialties that include at least, trauma surgery, neurosurgery, orthopedics, emergency medicine, anesthesiology, and may include hospital management and other subspecialties as required. The TPM/TNC or designee may be a member. Outcomes of peer review will be incorporated into the educational and policy program of the trauma service. (The forum in F may be combined with this meeting) **E**

H. Trauma Research Program:

( ) 1. Trauma Research Program designed to produce new knowledge applicable to the care of injured patients to include: an identifiable institutional review board process. **E**

( ) 2. A trauma research program designed to produce new knowledge applicable to the care of injured patients to include; three peer review publications over a three year period that could originate in any aspect of the trauma program. **E**

( ) 3. A nursing specific trauma research program designed to produce new knowledge applicable to the care of the injured patients to include trauma nursing research. Should have one publication in a three year period. **E**

VII. Outreach Program:

( ) A. Annually partner with the top three referring/receiving facilities to assess, plan, implement and evaluate physician and nursing trauma educational needs of those facilities transferring severely injured patients. **E**

( ) B. Each trauma center will maintain a document that reflects the functional process for providing case specific complimentary and/or constructive feedback to the top three referring/receiving facilities for extraordinary situations. **E**

( ) C. Each trauma center will collaborate with the top three regional Transferring/receiving facilities to design and provide an annual facility specific registry report by using the hospitals PI infrastructure for transmission. **E**

( ) D. Each Trauma Center will have in place a method for showing their involvement with the Emergency Medical Services agencies and/or personnel in there region. The trauma centers should be involved in EMS education, performance improvement and a method of providing complimentary and/or constructive feedback in general or case specific as needed. **E**

( ) E. Each Trauma Center will have in place a method for showing their involvement with the community in their region. The trauma center should be involved in community awareness of trauma and the trauma system. **E**

VIII. Injury Prevention Program:

( ) A. Demonstration of injury prevention activities based upon identified regional needs. **E**

( ) 1. Participation in a statewide trauma center collaborative injury prevention effort focused on a common need throughout the commonwealth. **O**

( ) 2. Perform studies in injury control while monitoring the effects of prevention programs. **O**

IX. Hospital Documents

( ) A. Evidence of American Board of Surgery Certification documented in credentials file or other documentation showing active pursuit of current certification or re-certification in general surgery by trauma surgeons. Must be eligible for certification. **E**

( ) B. Evidence of recognized board certification documented in credentials file or other documentation showing active pursuit of current certification or recertification in emergency medicine or appropriate specialty by emergency department physicians. **E**

( ) C. Documentation of ATLS and continuing education as outlined throughout this document. **E**

X. Institutional Commitment:

( ) A. Demonstrates knowledge, familiarity, and commitment of upper level administrative personnel to trauma service. **E**

( ) B. Upper level administration participation in multi-disciplinary trauma conferences/committees. **E**

( ) C. Evidence of yearly budget for the trauma program. **E**

VIRGINIA
LEVEL II TRAUMA CENTER
CHECK LIST

Name of Hospital: _____

Name of Person Completing Checklist: _____

Title: _____Contact Info:_____

Hospital Mailing Address: _____

City: _____ State: _____ Zip Code: _____

Return to Office of Emergency Medical Services
Attention: Trauma/Critical Care Coordinator
P.O. Box 2448
Richmond, Virginia 23218

I. Institutional Organization

A. Trauma Program

( )	1. Mission statement emphasizing continuous performance improvement in the management of the trauma patient.	**E**
( )	2. A recognizable program within the hospital which has a surgeon as its director/physician in charge.	**E**
( )	3. Support of the facilities' Board of Directors. (Board of Directors should be notified of applications for trauma designation, verification and approval of the Board of Health after a site review.)	**E**
( )	4. Administration supportive of Trauma Program.	**E**
( )	5. Evidence of an annual budget for Trauma Program.	**E**

B. Trauma Services:

1. Trauma Program Medical Director:

( )	a. Board certified/eligible general surgeon. May have emergency medicine physician as Co-Director.	**E**
( )	b. Minimum three years experience on trauma service or trauma fellowship training	**O**
( )	c. Participates in regional and national trauma organizations.	**O**
( )	d. Involved in trauma research and includes the publication of results and presentations.	**O**
( )	e. Actively involved in providing care to patients with life threatening or urgent injuries.	**E**

( ) f. Oversees all aspects of multidisciplinary care from the time of injury to discharge. **E**

( ) g. Current ATLS provider or instructor. **E**

( ) h. Will have 30 hours of category I trauma/critical care CME every three years and attend one national meeting whose focus is trauma or critical care. **E**

i. Will have 30 hours of category I trauma/critical care CME every three years and/or attend one national meeting whose focus is trauma or critical care. **ø**

( ) j. Attends more than one national meeting over three year period. **O**

( ) k. The Trauma Program Medical Director will provide an annual meeting and/or a self learning packet/web based learning program. All of the following shall receive this training:

- All full and part time surgeons taking trauma call.
- The Trauma Program Manager/Trauma Coordinator.
- Nurse practitioners and physicians assistants affiliated with the trauma program.
- All full and part time emergency department physicians who may be caring for trauma alert patients in the Emergency Department.
- All nurse practitioners and physicians assistant who may be caring for trauma alert patients in the Emergency Department.

The Trauma Program Medical Director will provide the following updates during this meeting:

i. Highlights from national meetings and other continuing education to include a discussion of any changes applicable to the current guidelines and practice.

ii. A review, including updated information from ATLS.

OR

( ) Each surgeon, emergency physician, nurse practitioner or physicians assistant participating/taking call in the service or could possibly be caring for trauma alert patients in the emergency department must complete 30 Category I CME's in trauma/critical care across the three year verification period or 20 across the two year designation period. Updating ATLS may be included in these CME's

*The facility must choose between providing an annual update or CME tract to educate physician staff.

2. Trauma Nurse Coordinator/Trauma Program Manager:

( ) a. Must have dedicated full time TNC/TPM **E**

b. Must have a TNC/TPM, may be a part-time position, though the trauma program shall be a major focus of their job description. **Ø**

( ) c. An identified TNC/TPM with overall management responsibilities for the trauma program. **E**

( ) d. Defined job description and organizational chart delineating the TNC/TPM role and responsibilities. **E**

( ) e. Must be a Registered Nurse. **E**

( ) f. The TNC/TPM, in addition to being a Registered Nurse, must possess experience in Emergency/Critical Care Nursing. **E**

( ) g. 30 CEU's/contact hours required per three year verification cycle, of which 50%, must be via an extramural source. **E**

( ) h. The TNC/TPM will attend one national meeting within the three year verification or two year initial designation period. **E**

( ) i. In addition to the national meeting in, I.B.2.h, attends other national meetings within the three year verification or two year designation. **O**

3. Trauma Registrar:

( ) a. Must be a minimum of one full FTE dedicated to the Trauma Registry. **E**

b. A minimum of a part time trauma registrar. **Ø**

( ) c. Trauma registrars must attend 24 hours registry or trauma critical care contact hours/education hours over three years. **E**

C. Trauma Team:

1. Trauma Team Response:

( ) a. There must be a clearly delineated trauma team response to the arrival of the patient with suspected or known major trauma in the Emergency Department 24 hours a day. **E**

2. Trauma Surgeon:

( ) a. A Trauma Surgeon must meet the patient in the ED upon arrival. A PGY4 or PGY5 general surgery resident capable of assessing emergent situations, providing control and leadership of the care of the trauma patient may meet this requirement. In the event that this requirement is provided by a resident, the trauma surgeon must be available in a timely matter. **E**

( ) b. The emergency physician may direct resuscitation and care of the patient until the arrival of the trauma team and may direct resuscitation and care of the patient until the arrival of the Trauma Team Leader. A senior level emergency medicine resident may fulfill this function provided there is an attending emergency medicine physician present in the ED **E**

( ) c. Trauma/general surgeons participating in the trauma program and taking active call must be dedicated to the facility while on trauma call and show active participation in the trauma program. **E**

( ) d. Trauma/general surgeons participating in the trauma program and taking active call must have completed ATLS, successfully, at least once in the past. **E**

( ) **3. Trauma Related Surgical Specialties:** Promptly available as needed **E**

4. Anesthesiology:

( ) a. Anesthesiologist in hospital 24 hours a day. (refer to Sec. II.D.1) **O**

( ) b. Anesthesiology must be on call and readily available 24 hours a day. (refer to Sec. II.D.2) **E**

( ) c. Anesthesiologist must be present for all emergent operative procedures on major trauma patients. (refer to Sec. II.D.3) **E**

5. Minimum Physician Coverage:

( ) a. A minimum of two attending level physicians must be present for the arrival of full trauma team alert patients. These physicians must be an anesthesiologist, EM physician, or general surgeon. A qualified general surgeon is expected to participate in major therapeutic decisions and be present in the emergency department for major resuscitations and at operative procedures in all seriously injured patients. **E**

b. A minimum of one attending level physician must be present for the arrival of trauma team alert patients. This physician must have the capability to manage the initial care of the majority of injured patients and have the ability to transfer patients that exceed their resources to an appropriate level trauma center. **Ø**

II. Hospital Departments/Divisions/Sections:

A. General Surgery:

( ) 1. Clinical capabilities in general surgery with two separate posted call schedules. One for trauma, one for general surgery. In those instances where a physician may simultaneously be listed on both schedules, there must be a defined back-up surgeon listed on the schedule to allow the trauma surgeon to provide care for the trauma patient. The trauma service director shall specify, in writing, the specific credentials that each back-up surgeon must have. These, at a minimum, must state that the back-up surgeon has surgical privileges at the trauma center and is boarded or eligible in general surgery (with board certification in general surgery within five years of completing residency). **In house 24 hours a day**. A PGY4 or PGY5 capable of assessing emergent situations in their respective specialties may fulfill this requirement. They must be capable of providing surgical treatment immediately and provide control and leadership of the care of the trauma patient.) **O**

( ) 2. Clinical capabilities in general surgery with two separate posted call schedules. One for trauma, one for general surgery. In those instances where a physician may simultaneously be listed on both schedules, there must be a defined back-up surgeon listed on the schedule to allow the trauma surgeon to provide care for the trauma patient. The trauma program director shall specify, in writing, the specific credentials that each back-up surgeon must have. These, at a minimum, must state that the back-up surgeon has surgical privileges at the trauma center and is boarded or eligible in general surgery (with board certification in general surgery within five years of completing residency). On Call. Trauma surgeon or PGY4/ PGY5 capable of assessing emergent situations in their respective specialties may fulfill this requirement. They must be capable of providing surgical treatment immediately and provide control and leadership of the care of the trauma patient.) **E**

( ) 3. When the trauma surgeon is not in house, the trauma surgeon should be present in the Emergency Department at the time of arrival of the patient. When sufficient prior notification has not been possible, an emergency department physician will immediately initiate the evaluation and resuscitation. Definitive surgical care must be instituted by the trauma surgeon in a timely fashion. **E**

( ) 4. The hospital shall establish a policy detailing the expected amount of time for the trauma surgeon to arrive from notification to arrival, this time shall not exceed 30 minutes. Selection of the interval will be based on patient outcome data. **E**

B. Neurological Surgery:

( ) 1. An Attending Neurosurgeon must be promptly available. The in-house requirement may be fulfilled by an in-house neurosurgery resident, or a surgeon/designee who has special competence, as judged by the Chief of Neurosurgery, in the care of patients with neural trauma, and who is capable of initiating diagnostic procedures. **O**

( ) 2. An Attending Neurosurgeon must be promptly available. This requirement may be fulfilled by a neurosurgery resident, or a surgeon/designee who has special competence, as judged by the Chief of Neurosurgery, in the care of patients with neural trauma, and who is capable of initiating diagnostic procedures. This may be on-call from out side of the hospital. **E**

( ) 3. If a neurosurgeon is responsible for more than one facility at the same time, they must have a back up schedule. **E**

( ) 4. If an attending neurosurgeon is not dedicated to the Level II Trauma Center, the center must have a back up call list OR the center must demonstrate no more than 24 emergency neurosurgical procedures per year AND the center must provide a neuro-trauma diversion plan. **E**

C. Emergency Medicine:

( ) 1. The emergency department physician must be a recognized member of the trauma team. and be represented on the facilities trauma committee. **E**

( ) 2. The Emergency Medical Director or their designee will have 30 hrs of Category I CME every three years and attend one national meeting with some content in trauma or critical care. **E**

( ) 3. The Emergency Medical Director or designee will maintain a current ATLS instructor or participant certification. **E**

D. Anesthesiology:

( ) 1. Anesthesiologist in hospital 24 hours a day. (Requirements may be filled by anesthesia residents, CRNA's capable of assessing emergent situations in trauma patients and providing any indicated treatment. Anesthesia personnel should be capable of providing anesthesia service for surgical trauma cases including major vascular, neurosurgical, pediatric, orthopedic, thoracic, ENT and other in-house surgical cases. If residents or CRNA's are used, a staff anesthesiologist must be present in the OR suite during surgery. Training and experience in both invasive and non-invasive monitoring is essential). **O**

( ) 2. Anesthesiology. (anesthesia personnel need not be in house 24 hours a day, but the Trauma Service should ensure that anesthesia personnel can be present in the emergency room at the time of arrival of the trauma alert patient. When sufficient prior notification has not been made possible, a designated member of the trauma team will immediately initiate the evaluation and resuscitation. Requirements must be filled by anesthesia personnel capable of assessing emergent situations in trauma patients and providing any indicated treatment. Anesthesia personnel should be capable of providing anesthesia service for surgical trauma cases including major vascular, neurosurgical, pediatric, orthopedic, thoracic, ENT and other in-house surgical sub-specialties involved in trauma cases. If residents or CRNA's are used, a staff anesthesiologist must be present in the OR suite during surgery. Training and experience in both invasive and non-invasive monitoring are essential). **E**

3. Anesthesiology. On call and promptly available from in or out of hospital. (Requirements must be filled by anesthesia personnel capable of assessing emergent situations in trauma patients and providing any indicated treatment. Anesthesia personnel should be capable of providing anesthesia service for surgical trauma cases including major vascular, neurosurgical, pediatric, orthopedic, thoracic, ENT and other in-house surgical sub-specialties involved in trauma cases. If residents or CRNA's are used, a staff anesthesiologist must be present in the OR suite during surgery. Training and experience in both invasive and non-invasive monitoring is essential). **ø**

III. Additional Clinical Capabilities:

A. Surgical:

( )	1. Cardiac Surgery	**O**
( )	2. Thoracic Surgery	**E**
( )	3. Orthopedic Surgery	**E**
( )	4. Pediatric Surgery	**O**
( )	5. Hand Surgery	**O**
( )	6. Microvascular/Replant Surgery	**O**
( )	7. Plastic Surgery	**E**
( )	8. Maxillofacial Surgery	**E**
( )	9. Ear, Nose & Throat Surgery	**E**
( )	10. Oral Surgery	**O**
( )	11. Ophthalmic Surgery	**E**
( )	12. Gynecological Surgery/Obstetrical Surgery	**E**

B. Non-surgical: (available)

( )	1. Cardiology	**E**
( )	2. Pulmonology	**O**
( )	3. Gastroenterology	**O**
( )	4. Hematology	**O**
( )	5. Infectious Disease	**O**
( )	6. Internal Medicine	**E**
( )	7. Nephrology	**O**
( )	8. Pathology	**E**
( )	9. Pediatrics	**O**
( )	10. Psychiatry	**O**
( )	11. Radiology	**E**
( )	12. Interventional Radiology	**O**

IV. Clinical Qualifications:

A. General/Trauma Surgeon's:

( ) 1. Board certified/eligible in general surgery. **E**

( ) 2. Must meet the educational requirements in I.B.1.k. **E**

( ) 3. Successful ATLS Course completion at least once. **E**

B. Emergency Medicine:

( ) 1. Board certified/eligible in emergency medicine (Exceptions may be made in rare instances based upon long term practice in emergency medicine). **E**

( ) 2. Must meet the educational requirements in I.B.1.k. **E**

( ) 3. Emergency department physicians must maintain current ATLS, **if not** boarded in emergency medicine. **E**

C. Neurosurgery:

( ) 1. Board certified within five years of completing residency successfully **E**

( ) 2. 10 hours of CME per year in neuro trauma. **O**

( ) 3. Must have successfully completed an ATLS course once. **O**

D. Orthopedic Surgery:

( ) 1. Board certified within five years of completing residency successfully. **E**

( ) 2. 10 hours of CME per year in skeletal trauma. **O**

( ) 3. Must have successfully completed an ATLS course once. **O**

E. Trauma Nursing:

( ) 1. All ED, OR, ICU, PACU and acute care unit staff that consistently care for the severely injured patient will receive annual update information provided by the TNC/TPM. This education may be provided by the representative/designee from each area listed here. The annual update information must include: **E**

i. Highlights from national meetings.

ii. Updates to TNCC, ATCN, CATN, ENPC and other continuing education.

OR

All nursing staff who participate in the trauma team response, or who primarily care for the injured patient in the ICU, OR, PACU, ED or surgical trauma units shall have a minimum eight hours trauma/critical care CME annually. This requirement may be filled by successfully completing TNCC, ATCN, CATN, ENPC.

( ) 2. All nursing staff caring for trauma patients have documented knowledge and skill in trauma nursing (trauma specific orientation, skills checklist). **E**

3. Documentation of specific orientation and continuing education for pediatric and burn care if these patients are regularly admitted to the trauma center.

4. >50% of Level III nursing staff who participate in the trauma team response must successfully complete a TNCC, ATCN course or participate in a resuscitation/assessment skill based educational program involving the Level I or II trauma program manager within one year of beginning trauma team responsibilities.

V. Facilities/Resources/Capabilities:

A. Emergency Department:

1. Personnel:

( ) a. Designated physician director/chairman (see clinical qualifications under Section II.C **E**

( ) b. 24 hour per day staffing by physicians physically present in the emergency department that meet the standard in Section IV. B **E**

( ) c. RN's, LPN/LVN's and nursing assistants/technicians in adequate numbers in the initial resuscitation area based on acuity and trauma team composition. **E**

( ) d. A minimum of two RN's per shift functioning in the trauma resuscitation area that possess trauma nursing training. **E**

( ) e. A written provision/plan for the acquisition of additional staffing on a 24 hour basis to support units with increased patient acuity, multiple emergency procedures and admissions. **E**

( ) f. Each nursing unit must have a copy of their staffing plan for review during the site visit. **E**

( ) g. A written protocol for the expectations and responsibilities of the trauma nurse and other team members during trauma resuscitations. **E**

( ) h. Nursing documentation for trauma patients is on a trauma flow sheet or electronic medical record equivalent. **E**

2. Emergency Department Resuscitation Equipment:

( ) a. For trauma centers caring for pediatric patients, there shall be equipment corresponding to the adult equipment, appropriate to age and size. There shall be information on pediatric medication dosing with this equipment. **E**

( ) b. Broselow Tape **E**

( ) c. Airway control & ventilation equipment (laryngoscopes with a variety of straight and curved blades, endotracheal tubes of all sizes, bag valve masks and methods to continually provide supplemental Oxygen) **E**

( ) d. Suction devices in adequate numbers to be able to care for the multi system trauma patient. **E**

( ) e. End Tidal CO2 detector to confirm tracheal placement of ETT. **E**

( ) f. Bedside monitor with central monitoring capabilities to include: ECG, Pulse Oximetry, central venous pressure monitoring. **E**

( ) g. Cardiac Monitor immediately available with capabilities to include: ECG, Pacing, external & internal defibrillation. **E**

( ) h. Intravenous fluids and administration devices to include large bore access and intraosseous devices (adult & pediatric) **E**

( ) i. Thermal control equipment for warming blood & IV fluid. **E**

( ) j. Method of rapid IV fluid administration must be able to infuse warmed IV fluid and warmed blood. **E**

( ) k. Arterial Catheters. **E**

( ) l. Sterile surgical sets/trays to include: airway control/cricothyrotomy, thoracotomy, vascular access, chest tube insertion, peritoneal lavage and central line access. **E**

( ) m. Thermal control equipment for cooling/warming patients. **E**

( ) n. Gastric catheters. **E**

( ) o. Skeletal traction devices. **E**

( ) p. Skeletal traction device for providing cervical traction. **E**

( ) q. 24 hour per day x-ray capability. **E**

( ) r. Sonography (FAST capability). **O**

( ) s. Doppler capability. **E**

( ) t. Two way radio communication linked with EMS transport units. **E**

B. Operating Suite:

( ) 1. Immediately available 24 hours per day. **E**

( ) 2. Personnel:

( ) a. 24 hour per day immediate availability of in-house staffing. **E**

( ) b. Personnel available 24 hours per day in-house or on-call and available in a timely manner. **Ø**

( ) c. Operating room adequately staffed in-house 24 hours per day. There should be a second on-call team promptly available when the in-house team is participating in an operative case. **E**

3. Operating Room Resuscitation Equipment:

( ) a. For trauma centers caring for pediatric patients, there shall be equipment corresponding to the adult equipment, appropriate to age and size. There shall be information on pediatric medication dosing with this equipment. **E**

( ) b. Cardiopulmonary bypass capability. **O**

( ) c. Operating microscope. **O**

d. Thermal control equipment

( ) i. For patients **E**

( ) ii. For blood & IV fluids **E**

( ) e. 24 hour per day x-ray capability, including C-Arm image intensifier. **E**

( ) f. Endoscopes and bronchoscopes. **E**

( ) g. Rapid infuser system **E**

( ) h. Craniotomy instruments **E**

( ) i. Capability of fixation of long bone and pelvic fractures. **E**

C. Postanesthesia Recovery Room or Surgical Intensive Care:

1. Personnel:

( ) a. 24 hour per day (in-house or on-call) staffing by RN's **E**

2. Equipment for patients of all ages, to include:

( ) a. capability for resuscitation and continuous monitoring of temperature, hemodynamics & gas exchange **E**

b. Thermal control equipment:

( ) i. for patients. **E**

( ) ii. for IV fluids, blood and blood products. **E**

( ) c. rapid infuser. **E**

( ) In the event that patients are boarded in the PACU as ICU overflow patients, then the equipment listed in section V.D.2 must be available. **E**

D. Intensive/Critical Care Unit:

1. Personnel:

( ) a. Designated surgical director or co-director. **O**

( ) b. Designated medical director or co-director. **E**

( ) c. Registered Nurses, educated in trauma care, should have a patient ratio of not more than two patients per RN. **E**

( ) d. Physician on duty in the ICU 24 hours per day or immediately available from within the facility as long as this physician is not the sole on call MD for the emergency department. **E**

e. Physician on duty in the ICU 24 hours per day or immediately available from within the hospital (which may be a physician who is the sole physician on call for the emergency department). **Ø**

2. Intensive Care Unit Equipment:

( ) a. For trauma centers caring for pediatric patients, there shall be equipment corresponding to the adult equipment, appropriate to age and size. There shall be information on pediatric medication dosing with this equipment. **E**

( ) b. Airway control & ventilation equipment (laryngoscopes with a variety of straight and curved blades, endotracheal tubes of all sizes, bag valve masks and methods to continually provide supplemental Oxygen) **E**

( ) c. Oxygen source with concentration controls. **E**

( ) d. Cardiac emergency cart. **E**

( ) e. Temporary transvenous pacer. **E**

( ) f. Bedside monitor with central monitoring capabilities to include: ECG, Pulse Oximetry, pressure monitoring abilities (ICP, Venous & Arterial). **E**

( ) g. Cardiac Monitor immediately available with capabilities to include: ECG, Pacing, external & internal defibrillation. **E**

( ) h. Mechanical ventilator. **E**

( ) i. Patient weighing devices. **E**

( ) j. Pulmonary function measuring device. **E**

( ) k. Temperature control devices for patients **E**

( ) l. Rapid fluid infuser capability. **E**

( ) m. Intracranial pressure monitoring device **E**

( ) n. Capability to perform blood gas measurements, hematocrit levels & chest x-ray studies. **E**

F. Radiological Services: (available 24 hours per day)

( ) 1. 24 hour per day in-house radiology technician. **E**

( ) 2. X-ray interpretation by radiologist available 24 hours per day. **E**

( ) 3. Angiography. **E**

( ) 4. Sonography. **E**

( ) 5. Computed Tomography Scanning (CT) **E**

( ) 6. 24 hour per day in-house CT Technologist. **E**

7. CT Technologist available within 30 minutes of notification or documentation that procedures are available within 30 minutes. **Ø**

( ) 8. Magnetic Resonance Imaging (MRI). **O**

( ) 9. Resuscitation equipment to include airway management and IV therapy. **E**

G. Clinical Laboratory Service: (to be available 24 hours/day)

( ) 1. Standard analysis of blood, urine, and other body fluids, including micro sampling when appropriate. **E**

( ) 2. Blood typing & cross-matching. **E**

( ) 3. Coagulation studies. **E**

( ) 4. Comprehensive blood bank, or access to a community central blood bank with storage facilities. **E**

( ) 5. Blood gas & ph determination abilities. **E**

( ) 6. Microbiology abilities. **E**

VI. Performance Improvement Program:

( ) A. Organized performance improvement program (PI) to examine the care of the injured patient, within the facility that looks towards improving outcome, decreasing complications and improving efficiency. The process should clearly document the PI process, action plan and resolution of the issue. **E**

( ) 1. Demonstrate relationship between PI outcomes and new or revised clinical protocols. **O**

( ) 2. Expansion of PI program to include regional trauma systems. **O**

( ) B. Performance Improvement program should follow state recommended audit filters at minimum. **E**

( ) 1. Participates in the Creation of institutional/regional based audit filters as identified by the institution/regional PI committees **O**

( ) C. The hospital shall set a time that the trauma surgeon has to respond to a full trauma team response. This policy should be available to be reviewed during the site review team visit. **E**

( ) D. Applying outcomes/benchmarking activity. **E**

( ) E. Participation in the Statewide Trauma Registry as mandated by the Code of Virginia. Data must be submitted to Trauma Registry within 30 days from the end of a quarter and includes: **E**

i. patients with ICD9-CM codes of 348.1, 800.0 – 959.9, 994.0 and 994.1, excluding 905-909 (late effect injuries), 910-924 (blisters, contusions, abrasions and insect bites), 930-939 (foreign bodies)

ii. Only those patients that were admitted to the facility are required to be reported. Includes admissions for observation (not ER observation unless held in the ER due to no inpatient bed availability).

iii. patients transferred from one hospital to another because of acute trauma (patient may be transferred directly from the Emergency Department or from an inpatient unit).

iv. victims of acute trauma that die within the hospital, Including, the emergency department and DOA's

*hospitals may over report within these ICD9 codes if desired for internal reporting

( ) 1. Compliance with section E above on a quarterly basis. **E**

( ) a. Utilization of State Registry/NTDB for purposes of institutional/Regional/State Research, Benchmarking for performance improvement and or Injury Prevention Programs. For mature trauma centers (by second verification visit) becomes a minimal standard. **O**

( ) F. A forum, including the Trauma Medical Director, E.D. Director, Trauma Coordinator, designee from Trauma subspecialties (neurosurgery, orthopedics) as specific issues present for multidisciplinary review of care of the injured patient including policies, procedures, system issues, and outcomes may include pre-hospital, nursing, ancillary personnel, a hospital administrator and physicians involved in trauma care. (The forum in G, below, may be combined with this meeting) **E**

( ) 1. 50% attendance by committee members (or designee) at multi-disciplinary review of care meetings. **E**

( ) G. The hospital will have a structured peer review committee that must have a method of evaluating trauma care. This committee must meet at least quarterly and include physicians representing pertinent specialties that include at least, trauma surgery, neurosurgery, orthopedics, emergency medicine, anesthesiology, and may include hospital management and other subspecialties as required. The TPM/TNC or designee may be a member. Outcomes of peer review will be incorporated into the educational and policy program of the trauma service. (The forum in F may be combined with this meeting) **E**

H. Trauma Research Program:

( ) 1. Trauma Research Program designed to produce new knowledge applicable to the care of injured patients to include: an identifiable institutional review board process. **O**

( ) 2. A trauma research program designed to produce new knowledge applicable to the care of injured patients to include; three peer review publications over a three year period that could originate in any aspect of the trauma program. **O**

( ) 3. A nursing specific trauma research program designed to produce new knowledge applicable to the care of the injured patients to include trauma nursing research. Should have one publication in a three year period. **O**

VII. Outreach Program:

( ) A. Annually partner with the top three referring/receiving facilities to assess, plan, implement and evaluate physician and nursing trauma educational needs of those facilities transferring severely injured patients. **E**

( ) B. Each trauma center will maintain a document that reflects the functional process for providing case specific complimentary and/or constructive feedback to the top three referring/receiving facilities for extraordinary situations. **E**

( ) C. Each trauma center will collaborate with the top three regional Transferring/receiving facilities to design and provide an annual facility specific registry report by using the hospitals PI infrastructure for transmission. **E**

( ) D. Each Trauma Center will have in place a method for showing their involvement with the Emergency Medical Services agencies and/or personnel in there region. The trauma centers should be involved in EMS education, performance improvement and a method of providing complimentary and/or constructive feedback in general or case specific as needed. **E**

( ) E. Each Trauma Center will have in place a method for showing their involvement with the community in their region. The trauma center should be involved in community awareness of trauma and the trauma system. **E**

VIII. Injury Prevention Program:

( ) A. Demonstration of injury prevention activities based upon identified regional needs. **E**

( ) 1. Participation in a statewide trauma center collaborative injury prevention effort focused on a common need throughout the commonwealth. **O**

( ) 2. Perform studies in injury control while monitoring the effects of prevention programs. **O**

IX. Hospital Documents

( ) A. Evidence of American Board of Surgery Certification documented in credentials file or other documentation showing active pursuit of current certification or re-certification in general surgery by trauma surgeons. Must be eligible for certification. **E**

( ) B. Evidence of recognized board certification documented in credentials file or other documentation showing active pursuit of current certification or recertification in emergency medicine or appropriate specialty by emergency department physicians. **E**

( ) C. Documentation of ATLS and continuing education as outlined throughout this document. **E**

X. Institutional Commitment:

( ) A. Demonstrates knowledge, familiarity, and commitment of upper level administrative personnel to trauma service. **E**

( ) B. Upper level administration participation in multi-disciplinary trauma conferences/committees. **E**

( ) C. Evidence of yearly budget for the trauma program. **E**

VIRGINIA
LEVEL III TRAUMA CENTER
CHECK LIST

Name of Hospital: _____

Name of Person Completing Checklist: _____

Title: _____Contact Info:_____

Hospital Mailing Address: _____

City: _____ State: _____ Zip Code: _____

Return to Office of Emergency Medical Services
Attention: Trauma/Critical Care Coordinator
P.O. Box 2448
Richmond, Virginia 23218

I. Institutional Organization

A. Trauma Program

( ) 1. Mission statement emphasizing continuous performance improvement in the management of the trauma patient. **E**

( ) 2. A recognizable program within the hospital which has a surgeon as its director/physician in charge. **E**

( ) 3. Support of the facilities' Board of Directors. (Board of Directors should be notified of applications for trauma designation, verification and approval of the Board of Health after a site review.) **E**

( ) 4. Administration supportive of Trauma Program. **E**

( ) 5. Evidence of an annual budget for Trauma Program. **E**

B. Trauma Services:

1. Trauma Program Medical Director:

( ) a. Board certified/eligible general surgeon. May have emergency medicine physician as Co-Director. **E**

( ) b. Minimum three years experience on trauma service or trauma fellowship training **O**

( ) c. Participates in regional and national trauma organizations. **O**

( ) d. Involved in trauma research and includes the publication of results and presentations. **O**

( ) e. Actively involved in providing care to patients with life threatening or urgent injuries. **E**

( ) f. Oversees all aspects of multidisciplinary care from the time of injury to discharge. **E**

( ) g. Current ATLS provider or instructor. **E**

( ) h. Will have 30 hours of category I trauma/critical care CME every three years and attend one national meeting whose focus is trauma or critical care. **O**

( ) i. Will have 30 hours of category I trauma/critical care CME every three years and/or attend one national meeting whose focus is trauma or critical care. **E**

( ) j. Attends more than one national meeting over three year period. **O**

( ) k. The Trauma Program Medical Director will provide an annual meeting and/or a self learning packet/web based learning program. All of the following shall receive this training:

- All full and part time surgeons taking trauma call.
- The Trauma Program Manager/Trauma Coordinator.
- Nurse practitioners and physicians assistants affiliated with the trauma program.
- All full and part time emergency department physicians who may be caring for trauma alert patients in the Emergency Department.
- All nurse practitioners and physicians assistant who may be caring for trauma alert patients in the Emergency Department.

The Trauma Program Medical Director will provide the following updates during this meeting:

i. Highlights from national meetings and other continuing education to include a discussion of any changes applicable to the current guidelines and practice.

ii. A review, including updated information from ATLS.

OR

Each surgeon, emergency physician, nurse practitioner or physicians assistant participating/taking call in the service or could possibly be caring for trauma alert patients in the emergency department must complete 30 Category I CME's in trauma/critical care across the three year verification period or 20 across the two year designation period. Updating ATLS may be included in these CME's

*The facility must choose between providing an annual update or CME tract to educate physician staff.

2. Trauma Nurse Coordinator/Trauma Program Manager:

( ) a. Must have dedicated full time TNC/TPM **O**

( ) b. Must have a TNC/TPM, may be a part-time position, though the trauma program shall be a major focus of their job description. **E**

( ) c. An identified TNC/TPM with overall management responsibilities for the trauma program. **O**

( ) d. Defined job description and organizational chart delineating the TNC/TPM role and responsibilities. **E**

( ) e. Must be a Registered Nurse. **E**

( ) f. The TNC/TPM, in addition to being a Registered Nurse, must possess experience in Emergency/Critical Care Nursing. **O**

( ) g. 30 CEU's/contact hours required per three year verification cycle, of which 50%, must be via an extramural source. **O**

( ) h. The TNC/TPM will attend one national meeting within the three year verification or two year initial designation period. **E**

( ) i. In addition to the national meeting in, I.B.2.h, attends other national meetings within the three year verification or two year designation. **O**

3. Trauma Registrar:

( ) a. Must be a minimum of one full FTE dedicated to the Trauma Registry. **O**

( ) b. A minimum of a part time trauma registrar. **E**

( ) c. Trauma registrars must attend 24 hours registry or trauma critical care contact hours/education hours over three years. **O**

C. Trauma Team:

1. Trauma Team Response:

( ) a. There must be a clearly delineated trauma team response to the arrival of the patient with suspected or known major trauma in the Emergency Department 24 hours a day. **E**

2. Trauma Surgeon:

( ) a. A Trauma Surgeon must meet the patient in the ED upon arrival. A PGY4 or PGY5 general surgery resident capable of assessing emergent situations, providing control and leadership of the care of the trauma patient may meet this requirement. In the event that this requirement is provided by a resident, the trauma surgeon must be available in a timely matter. **O**

( ) b. The emergency physician may direct resuscitation and care of the patient until the arrival of the trauma team and may direct resuscitation and care of the patient until the arrival of the Trauma Team Leader. A senior level emergency medicine resident may fulfill this function provided there is an attending emergency medicine physician present in the ED. **E**

( ) c. Trauma/General Surgeons participating in the trauma program and taking active call must be dedicated to the facility while on trauma call and show active participation in the trauma program. **E**

( ) d. Trauma/general surgeons participating in the trauma program and taking active call must have completed ATLS, successfully, at least once in the past. **E**

( ) **3. Trauma Related Surgical Specialties:** Promptly available as needed — **E**

4. Anesthesiology:

( ) a. Anesthesiologist in hospital 24 hours a day. (refer Sec. II.D.1) — **O**

( ) b. Anesthesiology must be on call and readily available 24 hours a day. (refer to Sec. II.D.2) — **E**

( ) c. Anesthesiologist must be present for all emergent operative procedures on major trauma patients. (refer to Sec. II.D.3) — **E**

5. Minimum Physician Coverage:

( ) a. A minimum of two attending level physicians must be present for the arrival of full trauma team alert patients. These physicians must be an anesthesiologist, EM physician, or general surgeon. A qualified general surgeon is expected to participate in major therapeutic decisions and be present in the emergency department for major resuscitations and at operative procedures in all seriously injured patients — **O**

( ) b. A minimum of one attending level physician must be present for the arrival of trauma team alert patients. This physician must have the capability to manage the initial care of the majority of injured patients and have the ability to transfer patients that exceed their resources to an appropriate level trauma center. — **E**

II. Hospital Departments/Divisions/Sections:

A. General Surgery:

( ) 1. Clinical capabilities in general surgery with two separate posted call schedules. One for trauma, one for general surgery. In those instances where a physician may simultaneously be listed on both schedules, there must be a defined back-up surgeon listed on the schedule to allow the trauma surgeon to provide care for the trauma patient. The trauma service director shall specify, in writing, the specific credentials that each back-up surgeon must have. These, at a minimum, must state that the back-up surgeon has surgical privileges at the trauma center and is boarded or eligible in general surgery (with board certification in general surgery within five years of completing residency). In house 24 hours a day. A PGY4 or PGY5 capable of assessing emergent situations in their respective specialties may fulfill this requirement. They must be capable of providing surgical treatment immediately and provide control and leadership of the care of the trauma patient.) — **O**

( ) 2. Clinical capabilities in general surgery with two separate posted call schedules. One for trauma, one for general surgery. In those instances where a physician may simultaneously be listed on both schedules, there must be a defined back-up surgeon listed on the schedule to allow the trauma surgeon to provide care for the trauma — **E***

patient. The trauma program director shall specify, in writing, the specific credentials that each back-up surgeon must have. These, at a minimum, must state that the back-up surgeon has surgical privileges at the trauma center and is boarded or eligible in general surgery (with board certification in general surgery within five years of completing residency). On Call. Trauma surgeon or PGY4/ PGY5 capable of assessing emergent situations in their respective specialties may fulfill this requirement. They must be capable of providing surgical treatment immediately and provide control and leadership of the care of the trauma patient.)

( ) 3. When the trauma surgeon is not in house, the trauma surgeon should be present in the Emergency Department at the time of arrival of the patient. When sufficient prior notification has not been possible, an emergency department physician will immediately initiate the evaluation and resuscitation. Definitive surgical care must be instituted by the trauma surgeon in a timely fashion. **E**

( ) 4. The hospital shall establish a policy detailing the expected amount of time for the trauma surgeon to arrive from notification to arrival, this time shall not exceed 30 minutes. Selection of the interval will be based on patient outcome data. **E**

B. Neurological Surgery:

( ) 1. An Attending Neurosurgeon must be promptly available. The in-house requirement may be fulfilled by an in-house neurosurgery resident, or a surgeon/designee who has special competence, as judged by the Chief of Neurosurgery, in the care of patients with neural trauma, and who is capable of initiating diagnostic procedures. **O**

( ) 2. An Attending Neurosurgeon must be promptly available. This requirement may be fulfilled by a neurosurgery resident, or a surgeon/designee who has special competence, as judged by the Chief of Neurosurgery, in the care of patients with neural trauma, and who is capable of initiating diagnostic procedures. This may be on-call from out side of the hospital. **O**

( ) 3. If a neurosurgeon is responsible for more than one facility at the same time, they must have a back up schedule. **O**

4. If an attending neurosurgeon is not dedicated to the Level II Trauma Center, the center must have a back up call list OR the center must demonstrate no more than 24 emergency neurosurgical procedures per year AND the center must provide a neuro-trauma diversion plan. **Ø**

C. Emergency Medicine:

( ) 1. The emergency department physician must be a recognized member of the trauma team. and be represented on the facilities trauma committee. **E**

( ) 2. The Emergency Medical Director or their designee will have 30 hrs of Category I CME every three years and attend one national meeting with some content in trauma or critical care. **E**

( ) 3. The Emergency Medical Director or designee will maintain a current ATLS instructor or participant certification. **E**

D. Anesthesiology:

( ) 1. Anesthesiologist in hospital 24 hours a day. (Requirements may be filled by anesthesia residents, CRNA's capable of assessing emergent situations in trauma patients and providing any indicated treatment. Anesthesia personnel should be capable of providing anesthesia service for surgical trauma cases including major vascular, neurosurgical, pediatric, orthopedic, thoracic, ENT and other in-house surgical cases. If residents or CRNA's are used, a staff anesthesiologist must be present in the OR suite during surgery. Training and experience in both invasive and non-invasive monitoring is essential). **O**

( ) 2. Anesthesiology. (anesthesia personnel need not be in house 24 hours a day, but the Trauma Service should ensure that anesthesia personnel can be present in the emergency room at the time of arrival of the trauma alert patient. When sufficient prior notification has not been made possible, a designated member of the trauma team will immediately initiate the evaluation and resuscitation. Requirements must be filled by anesthesia personnel capable of assessing emergent situations in trauma patients and providing any indicated treatment. Anesthesia personnel should be capable of providing anesthesia service for surgical trauma cases including major vascular, neurosurgical, pediatric, orthopedic, thoracic, ENT and other in-house surgical sub-specialties involved in trauma cases. If residents or CRNA's are used, a staff anesthesiologist must be present in the OR suite during surgery. Training and experience in both invasive and non-invasive monitoring are essential). **O**

( ) 3. Anesthesiology. On call and promptly available from in or out of hospital. (Requirements must be filled by anesthesia personnel capable of assessing emergent situations in trauma patients and providing any indicated treatment. Anesthesia personnel should be capable of providing anesthesia service for surgical trauma cases including major vascular, neurosurgical, pediatric, orthopedic, thoracic, ENT and other in-house surgical sub-specialties involved in trauma cases. If residents or CRNA's are used, a staff anesthesiologist must be present in the OR suite during surgery. Training and experience in both invasive and non-invasive monitoring is essential). **E**

III. Additional Clinical Capabilities:

A. Surgical:

( )	1. Cardiac Surgery	O
( )	2. Thoracic Surgery	O
( )	3. Orthopedic Surgery	E
( )	4. Pediatric Surgery	O
( )	5. Hand Surgery	O
( )	6. Microvascular/Replant Surgery	O
( )	7. Plastic Surgery	O
( )	8. Maxillofacial Surgery	O
( )	9. Ear, Nose & Throat Surgery	O
( )	10. Oral Surgery	O
( )	11. Ophthalmic Surgery	O
( )	12. Gynecological Surgery/Obstetrical Surgery	O

B. Non-surgical: (available)

( )	1. Cardiology	O
( )	2. Pulmonology	O
( )	3. Gastroenterology	O
( )	4. Hematology	O
( )	5. Infectious Disease	O
( )	6. Internal Medicine	E
( )	7. Nephrology	O
( )	8. Pathology	E
( )	9. Pediatrics	O
( )	10. Radiology	E
( )	11. Interventional Radiology	O

IV. Clinical Qualifications:

A. General/Trauma Surgeon's:

( )	1. Board certified/eligible in general surgery.	E
( )	2. Must meet the educational requirements in I.B.1.k.	E
( )	3. Successful ATLS Course completion at least once.	E

B. Emergency Medicine:

( )	1. Board certified/eligible in emergency medicine (Exceptions may be made in rare instances based upon long term practice in emergency medicine).	E
( )	2. Must meet the educational requirements in I.B.1.k.	E

( ) 3. Emergency department physicians must maintain current ATLS, **if not** boarded in emergency medicine. **E**

C. Neurosurgery:

( ) 1. Board certified within five years of completing residency successfully **O**

( ) 2. 10 hours of CME per year in neuro trauma. **O**

( ) 3. Must have successfully completed an ATLS course once. **O**

D. Orthopedic Surgery:

( ) 1. Board certified within five years of completing residency successfully. **O**

( ) 2. 10 hours of CME per year in skeletal trauma. **O**

( ) 3. Must have successfully completed an ATLS course once. **O**

E. Trauma Nursing:

1. All ED, OR, ICU, PACU and acute care unit staff that consistently care for the severely injured patient will receive annual update information provided by the TNC/TPM. This education may be provided by the representative/designee from each area listed here. The annual update information must include:

i. Highlights from national meetings.
ii. Updates to TNCC, ATCN, CATN, ENPC and other continuing education.

OR

All nursing staff who participate in the trauma team response, or who primarily care for the injured patient in the ICU, OR, PACU, ED or surgical trauma units shall have a minimum eight hours trauma/critical care CME annually. This requirement may be filled by successfully completing TNCC, ATCN, CATN, ENPC. **E**

( ) 2. All nursing staff caring for trauma patients have documented knowledge and skill in trauma nursing (trauma specific orientation, skills checklist).

( ) 3. Documentation of specific orientation and continuing education for pediatric and burn care if these patients are regularly admitted to the trauma center.

( ) 4. >50% of Level III nursing staff who participate in the trauma team response must successfully complete a TNCC, ATCN course or participate in a resuscitation/assessment skill based educational program involving the Level I or II trauma program manager within one year of beginning trauma team responsibilities.

V. Facilities/Resources/Capabilities:

A. Emergency Department:

1. Personnel:

( ) a. Designated physician director/chairman (see clinical qualifications under Section II.C **E**

( ) b. 24 hour per day staffing by physicians physically present in the emergency department that meet the standard in Section IV. B **E**

( ) c. RN's, LPN/LVN's and nursing assistants/technicians in adequate numbers in the initial resuscitation area based on acuity and trauma team composition. **E**

( ) d. A minimum of two RN's per shift functioning in the trauma resuscitation area that possess trauma nursing training. **E**

( ) e. A written provision/plan for the acquisition of additional staffing on a 24 hour basis to support units with increased patient acuity, multiple emergency procedures and admissions. **E**

( ) f. Each nursing unit must have a copy of their staffing plan for review during the site visit. **E**

( ) g. A written protocol for the expectations and responsibilities of the trauma nurse and other team members during trauma resuscitations. **E**

( ) h. Nursing documentation for trauma patients is on a trauma flow sheet or electronic medical record equivalent. **E**

2. Emergency Department Resuscitation Equipment:

( ) a. For trauma centers caring for pediatric patients, there shall be equipment corresponding to the adult equipment, appropriate to age and size. There shall be information on pediatric medication dosing with this equipment. **E**

( ) b. Broselow Tape **E**

( ) c. Airway control & ventilation equipment (laryngoscopes with a variety of straight and curved blades, endotracheal tubes of all sizes, bag valve masks and methods to continually provide supplemental Oxygen) **E**

( ) d. Suction devices in adequate numbers to be able to care for the multi system trauma patient. **E**

( ) e. End Tidal CO2 detector to confirm tracheal placement of ETT. **E**

( ) f. Bedside monitor with central monitoring capabilities to include: ECG, Pulse Oximetry, central venous pressure monitoring. **E**

( ) g. Cardiac Monitor immediately available with capabilities to include: ECG, Pacing, external & internal defibrillation. **E**

( ) h. Intravenous fluids and administration devices to include large bore access and intraosseous devices (adult & pediatric) **E**

( ) i. Thermal control equipment for warming blood & IV fluid. **E**

( ) j. Method of rapid IV fluid administration, must be able to infuse warmed IV fluid and warmed blood. **E**

( )	k. Arterial Catheters.	O
( )	l. Sterile surgical sets/trays to include: airway control/cricothyrotomy, thoracotomy, vascular access, chest tube insertion, peritoneal lavage and central line access.	E
( )	m. Thermal control equipment for cooling/warming patients.	E
( )	n. Gastric catheters.	E
( )	o. Skeletal traction devices.	E
( )	p. Skeletal traction device for providing cervical traction.	E
( )	q. 24 hour per day x-ray capability.	E
( )	r. Sonography (FAST capability).	O
( )	s. Doppler capability.	E
( )	t. Two way radio communication linked with EMS transport units.	E

B. Operating Suite:

( )	1. Immediately available 24 hours per day.	O
	2. Personnel:	
( )	a. 24 hour per day immediate availability of in-house staffing.	O
( )	b. Personnel available 24 hours per day in-house or on-call and available in a timely manner.	E
( )	c. Operating room adequately staffed in-house 24 hours per day. There should be a second on-call team promptly available when the in-house team is participating in an operative case.	O

3. Operating Room Resuscitation Equipment:

( )	a. For trauma centers caring for pediatric patients, there shall be equipment corresponding to the adult equipment, appropriate to age and size. There shall be information on pediatric medication dosing with this equipment.	E
	b. Cardiopulmonary bypass capability.	Ø
( )	c. Operating microscope.	O
	d. Thermal control equipment	
( )	i. For patients	E
( )	ii. For blood & IV fluids	E
( )	e. 24 hour per day x-ray capability, including C-Arm image intensifier.	E
( )	f. Endoscopes and bronchoscopes.	E
( )	g. Rapid infuser system	E
	h. Craniotomy instruments	Ø
( )	i. Capability of fixation of long bone and pelvic fractures.	O

C. Postanesthesia Recovery Room or Surgical Intensive Care:

	1. Personnel:	
( )	a. 24 hour per day (in-house or on-call) staffing by RN's	E

2. Equipment for patients of all ages, to include:

( ) a. capability for resuscitation and continuous monitoring of temperature, hemodynamics & gas exchange **E**

b. Thermal control equipment:

( ) i. for patients. **E**

( ) ii. for IV fluids, blood and blood products. **E**

( ) c. rapid infuser. **E**

( ) In the event that patients are boarded in the PACU as ICU overflow patients, then the equipment listed in section V.D.2 must be available. **E**

D. Intensive/Critical Care Unit:

1. Personnel:

( ) a. Designated surgical director or co-director. **O**

( ) b. Designated medical director or co-director. **E**

( ) c. Registered Nurses, educated in trauma care, should have a patient ratio of not more than two patients per RN. **E**

( ) d. Physician on duty in the ICU 24 hours per day or immediately available from within the facility as long as this physician is not the sole on call MD for the emergency department. **O**

( ) e. Physician on duty in the ICU 24 hours per day or immediately available from within the hospital (which may be a physician who is the sole physician on call for the emergency department). **E**

2. Intensive Care Unit Equipment:

( ) a. For trauma centers caring for pediatric patients, there shall be equipment corresponding to the adult equipment, appropriate to age and size. There shall be information on pediatric medication dosing with this equipment. **E**

( ) b. Airway control & ventilation equipment (laryngoscopes with a variety of straight and curved blades, endotracheal tubes of all sizes, bag valve masks and methods to continually provide supplemental Oxygen) **E**

( ) c. Oxygen source with concentration controls. **E**

( ) d. Cardiac emergency cart. **E**

( ) e. Temporary transvenous pacer. **E**

( ) f. Bedside monitor with central monitoring capabilities to include: ECG, Pulse Oximetry, pressure monitoring abilities (ICP, Venous & Arterial). **E**

( ) g. Cardiac Monitor immediately available with capabilities to include: ECG, Pacing, external & internal defibrillation. **E**

( ) h. Mechanical ventilator. **E**

( ) i. Patient weighing devices. **E**

( ) j. Pulmonary function measuring device. **E**

( )	k. Temperature control devices for patients	E
( )	l. Rapid fluid infuser capability.	E
( )	m. Intracranial pressure monitoring device	O
( )	n. Capability to perform blood gas measurements, hematocrit levels & chest x-ray studies.	E
	F. Radiological Services: (available 24 hours per day)	E
( )	1. 24 hour per day in-house radiology technician.	E
( )	2. X-ray interpretation by radiologist available 24 hours per day.	O
( )	3. Angiography.	O
( )	4. Sonography.	O
( )	5. Computed Tomography Scanning (CT)	E
( )	6. 24 hour per day in-house CT Technologist.	O
( )	7. CT Technologist available within 30 minutes of notification or documentation that procedures are available within 30 minutes.	E
( )	8. Magnetic Resonance Imaging (MRI).	O
( )	9. Resuscitation equipment to include airway management and IV therapy.	E
	G. Clinical Laboratory Service: (to be available 24 hours/day)	
( )	1. Standard analysis of blood, urine, and other body fluids, including micro sampling when appropriate.	E
( )	2. Blood typing & cross-matching.	E
( )	3. Coagulation studies.	E
( )	4. Comprehensive blood bank, or access to a community central blood bank with storage facilities.	E
( )	5. Blood gas & ph determination abilities.	E
( )	6. Microbiology abilities.	E

VI. Performance Improvement Program:

( )	A. Organized performance improvement program (PI) to examine the care of the injured patient, within the facility that looks towards improving outcome, decreasing complications and improving efficiency. The process should clearly document the PI process, action plan and resolution of the issue.	E
( )	1. Demonstrate relationship between PI outcomes and new or revised clinical protocols.	O
( )	2. Expansion of PI program to include regional trauma systems.	O
( )	B. Performance Improvement program should follow state recommended audit filters at minimum.	E
( )	1. Participates in the Creation of institutional/regional based audit filters as identified by the institution/regional PI committees	O

( ) C. The hospital shall set a time that the trauma surgeon has to respond to a full trauma team response. This policy should be available to be reviewed during the site review team visit. **E**

( ) D. Applying outcomes/benchmarking activity. **E**

( ) E. Participation in the Statewide Trauma Registry as mandated by the Code of Virginia. Data must be submitted to Trauma Registry within 30 days from the end of a quarter and includes: **E**

i. patients with ICD9-CM codes of 348.1, 800.0 – 959.9, 994.0 and 994.1, excluding 905-909 (late effect injuries), 910-924 (blisters, contusions, abrasions and insect bites), 930-939 (foreign bodies)

ii. Only those patients that were admitted to the facility are required to be reported. Includes admissions for observation (not ER observation unless held in the ER due to no inpatient bed availability).

iii. patients transferred from one hospital to another because of acute trauma (patient may be transferred directly from the Emergency Department or from an inpatient unit).

iv. victims of acute trauma that die within the hospital, Including, the emergency department and DOA's

*hospitals may over report within these ICD9 codes if desired for internal reporting

( ) 1. Compliance with section E above on a quarterly basis. **E**

( ) a. Utilization of State Registry/NTDB for purposes of institutional/Regional/State Research, Benchmarking for performance improvement and or Injury Prevention Programs. For mature trauma centers (by second verification visit) becomes a minimal standard. **O**

( ) F. A forum, including the Trauma Medical Director, E.D. Director, Trauma Coordinator, designee from Trauma subspecialties (neurosurgery, orthopedics) as specific issues present for multidisciplinary review of care of the injured patient including policies, procedures, system issues, and outcomes may include pre-hospital, nursing, ancillary personnel, a hospital administrator and physicians involved in trauma care. (The forum in G, below, may be combined with this meeting) **E**

( ) 1. 50% attendance by committee members (or designee) at multi-disciplinary review of care meetings. **E**

( ) G. The hospital will have a structured peer review committee that must have a method of evaluating trauma care. This committee must meet at least quarterly and include physicians representing pertinent specialties that include at least, trauma surgery, neurosurgery, orthopedics, emergency medicine, anesthesiology, and may include hospital management and other subspecialties as required. The TPM/TNC or designee may be a member. Outcomes of peer review will be incorporated into the educational and policy program of the trauma service. (The forum in F may be combined with this meeting) **E**

H. Trauma Research Program:

( ) 1. Trauma Research Program designed to produce new knowledge applicable to the care of injured patients to include: an identifiable institutional review board process. **O**

( ) 2. A trauma research program designed to produce new knowledge applicable to the care of injured patients to include; three peer review publications over a three year period that could originate in any aspect of the trauma program. **O**

( ) 3. A nursing specific trauma research program designed to produce new knowledge applicable to the care of the injured patients to include trauma nursing research. Should have one publication in a three year period. **O**

VII. Outreach Program:

( ) A. Annually partner with the top three referring/receiving facilities to assess, plan, implement and evaluate physician and nursing trauma educational needs of those facilities transferring severely injured patients. **E**

( ) B. Each trauma center will maintain a document that reflects the functional process for providing case specific complimentary and/or constructive feedback to the top three referring/receiving facilities for extraordinary situations. **E**

( ) C. Each trauma center will collaborate with the top three regional Transferring/receiving facilities to design and provide an annual facility specific registry report by using the hospitals PI infrastructure for transmission. **E**

( ) D. Each trauma center will have in place a method for showing their involvement with the Emergency Medical Services agencies and/or personnel in there region. The trauma centers should be involved in EMS education, performance improvement and a method of providing complimentary and/or constructive feedback in general or case specific as needed. **E**

( ) E. Each Trauma Center will have in place a method for showing their involvement with the community in their region. The trauma center should be involved in community awareness of trauma and the trauma system. **E**

VIII. Injury Prevention Program:

( ) A. Demonstration of injury prevention activities based upon identified regional needs. **E**

( ) 1. Participation in a statewide trauma center collaborative injury prevention effort focused on a common need throughout the commonwealth. **O**

( ) 2. Perform studies in injury control while monitoring the effects of prevention programs. **O**

IX. Hospital Documents

( ) A. Evidence of American Board of Surgery Certification documented in credentials file or other documentation showing active pursuit of current certification or re-certification in general surgery by trauma surgeons. Must be eligible for certification. **E**

( ) B. Evidence of recognized board certification documented in credentials file or other documentation showing active pursuit of current certification or recertification in emergency medicine or appropriate specialty by emergency department physicians. **E**

( ) C. Documentation of ATLS and continuing education as outlined throughout this document. **E**

X. Institutional Commitment:

( ) A. Demonstrates knowledge, familiarity, and commitment of upper level administrative personnel to trauma service. **E**

( ) B. Upper level administration participation in multi-disciplinary trauma conferences/committees. **E**

( ) C. Evidence of yearly budget for the trauma program. **E**

Appendix F

Sample Two Tier Trauma Response Policy

Statement: The announcement of a "CODE BLUE" or "CODE YELLOW" over the hospital public address system indicates the arrival or anticipated arrival of a multiple trauma victim(s) to the Emergency Department. "CODE BLUE" or "CODE YELLOW" shall be determined by the Emergency Department physician or trauma surgeon based on suggested triage guidelines. When the clinical situation is unclear, there should be no reluctance in calling a code.
It is imperative that notification of Pediatrics (17 years or younger) be announced with the CODE for the proper staff response.

1. Code Blue Triage Parameters

   The purpose of a CODE BLUE with full Trauma Team response is to assure a rapid and orderly arrival in the operating room as well as immediate management of airway, breathing and circulatory problems identified in the pre-hospital setting.

   a. Airway and breathing emergencies
   b. Systolic blood pressure of ≤ 85
   c. Glasgow Coma Score (GCS) of ≤ 8
   d. Paralysis
   e. Penetrating injuries to head, neck and/or torso
   f. Crush to torso/upper thighs
   g. Major amputations

2. Code Yellow Triage Parameters

   The purpose of a CODE YELLOW with a modified Trauma team response is to rapidly assess patients who have no significant physiologic impairments, but because of mechanism of injury or anatomic alteration s need a rapid evaluation. If necessary, these patients will be upgraded to CODE BLUE should the patient's condition warrants.

   a. Physiologic Alterations

      - loss of consciousness
      - pregnancy of 3 months or greater

   b. Anatomic Alterations

      - maxillo-facial trauma
      - significant subcutaneous air
      - evidence of pelvic instability
      - two or more long bone deformities
      - major lacerations involving fascia

2. Code Yellow Triage Parameters (cont'd)

   c. Mechanism of Injury

      - ejection from vehicle
      - pedestrian vs. MVA/Motorcyclist $\geq$ 15 mph
      - burns > 20%
      - suspected respiratory burns
      - high energy dissipation
      - significant vehicle damage
      - prolonged extrication of > 20 minutes
      - documented falls > 20 feet or 2 stories
      - MVA $\geq$ 35 mph

* Extremes in age (< 5 years or > 65 years) should receive special consideration.

** Comorbid conditions when known (i.e. diabetes, heart disease, and other chronic debilitative diseases) should receive special consideration.

ACS
American College of Surgeons.

AACN
American Association of Critical Care Nurses.

ACEP
American College of Emergency Physicians.

ACLS-Certified
Individuals certified by the American Heart Association in Advanced Cardiac Life Support.

ACS COT
American College Of Surgeons Committee on Trauma.

AIS
Abbreviated Injury Scale, an anatomic severity scoring system.

ATCN®
Advanced Trauma Care for Nurses® is an advanced course designed for the registered nurse interested in increasing his/her knowledge in management of the multiple trauma patient.

ATLS®
The Advanced Trauma Life Support® Course of the American College of Surgeons.

board certified
Physicians certified by appropriate specialty boards recognized by the American Board of Specialties.

CATN®
Course in Advanced Trauma Nursing®, is a course sponsored by the Emergency Nurses Association for RN's

CEN
Certified Emergency Nurse, a certification for emergency nurses from the Emergency Nurses Association.

CEO
Chief Executive Officer.

CME's
Continuing medical education courses.

critical deficiencies
Criterion noted as "Essential" in the Trauma Center Criteria and are of high importance to patient care or the administration of the trauma program that are not being met. Resolution may vary from not verifying the hospital, the need for the hospital to submit an action plan to correct the deficiency with a follow up modified site review to re-evaluation at the next site review.

CRNA
Certified Registered Nurse Anesthetists.

designated, trauma center
The process by which the Virginia Department of Health identifies hospitals that are prepared to consistently provide care to the traumatized patient.

"E"
Denotes an Essential Criteria, these are criteria that must be met by the hospital to maintain designation as a trauma center.

ED
Emergency Department.

EMS
Emergency Medical Services

ENPC®
Emergency Nursing Pediatric Course®, is a course sponsored by the Emergency Nurses Association for Registered Nurses.

GCS
Glascow Coma Scale.

ICU
Intensive Care Unit/Critical Care Unit

Immediately available
Implies the physical presence of the health professional in a stated location at the time of need by the trauma patient.

ICD9
Ninth edition of International Classification of Disease, a standard coding system that includes injuries and diseases.

ISS
Injury Severity Score-the sum of the squares of the Abbreviated Injury Scale scores of the three most severely injured body regions.

lead agency
In Virginia the Virginia Department of Health, Office of Emergency Medical Services is, by Code, the lead agency for trauma system planning and designation.

Level I
Level I trauma centers have an organized trauma response and are required to provide total care for every aspect of injury, from prevention through rehabilitation. These facilities must have adequate depth of resources and personnel with the capability of providing leadership, education, research and system planning.

Level II
Level II trauma centers have an organized trauma response and are also expected to provide initial definitive care, regardless of the severity of injury. The specialty requirements may be fulfilled by on call staffs, which are promptly available to the patient. Due to some limited resources, Level II centers may have to transfer more complex injuries to a Level I center.
Level II centers should also take on responsibility for education and system leadership within their region.

Level III
Level III centers, through an organized trauma response, can provide prompt assessment, resuscitation, stabilization, emergency operations and also arrange for the transfer of the patient to a facility that can provide definitive trauma care.
Level III centers should also take on responsibility for education and system leadership within their region.

multidisciplinary trauma review committee
Committee composed of the trauma service director and other physician members of the trauma service that reviews trauma care issues along with other physician sub specialties and other medical disciplines and departments within a hospital.

non critical deficiencies
When a non-critical deficiency has been identified for the first time it will be noted in the team leaders' summary. However, if a non-critical deficiency is identified in two out of three sequential visits, the center will be asked to submit a plan of correction to OEMS within three months. At the next site having implemented the plan and

improvement in the area of deficiency identified. If the deficiency has not been met at this point, it becomes a critical deficiency.

NTDB
National Trauma Data Bank

"O"
Denotes an Optimal criteria, these criteria are not required by the hospital as essential for designation as a trauma center.

OEMS
The Virginia Office of Emergency Medical Services.

OR
Operating Room

PACU
Post Anesthesia Care Unit (OR recovery room)

PALS
Pediatric Advanced Life Support course developed and sponsored by the American Heart Association.

performance improvement (PI)
Formerly known as Quality Assurance/Quality Improvement.

PGY4/PGY5
postgraduate year; classification system for residents in postgraduate training. The number indicates the year they are in during their post medical school residency program.

rehabilitation
Services that seek to return a trauma patient to the fullest physical, psychological, social, vocational and educational level of functioning that they were prior to their trauma. response time Interval between notification and arrival of the general surgeon or surgical specialist in the emergency department or operating room.

revised trauma score (RTS)
A prehospital/emergency department scoring system in which numerical values are assigned to differing levels of the GCS, systolic blood pressure and respiratory rate.

RN
Registered Nurse

site review
The process by which the Virginia Department of Health, Office of EMS evaluates a hospitals ability to consistently provide care to the traumatized patient. Generally a team comprised of OEMS Staff, a trauma surgeon, hospital administrator, a critical care RN experienced in trauma care and an emergency physician perform an on site inspection to ensure the hospital has the capability to serve as a designated trauma center. The team makes it's recommendation to the State Health Commissioner.

State Emergency Medical Services Advisory Board
A Board comprised of various members with special interest and experience in matters of EMS that act as an advisory group to the Governor.

TNC
Trauma Nurse Coordinator; is a designated individual with responsibility for coordination of all activities on the trauma service working in collaboration with the trauma service medical director.

TNCC®
Trauma Nurse Core Curriculum. Is a course sponsored by the Emergency Nurses Association and is intended to provide basic trauma skills and knowledge to Registered Nurses.

TPM
Trauma Program Manager, see TNC.

Trauma Victim
A person who has acquired serious injuries and or wounds brought on by either an outside force or an outside energy. These injuries and or wounds may affect one or more body systems by blunt, penetrating or burn injuries. These injuries may be life altering, life threatening or ultimately fatal wounds.

Trauma Center
A hospital that has gone through the process outlined in this document to be designated by The Virginia Department of Health, Office of EMS as a Trauma Center.

Trauma Registrar
Is the individual(s), responsible for entering, analyzing and evaluating the data maintained in the trauma registry. Frequently this person also oversees the performance improvement efforts of the trauma service.

Trauma Registry
Is a database to provide information for analysis and evaluation of the quality of patient, including epidemiological and demographic characteristics of trauma patients.

trauma service medical director
Physician designated by the hospital and medical staff to coordinate trauma care.

trauma team
A multidisciplinary healthcare team that is predetermined to provide an organized approach to providing trauma care.

TSO&MC
Trauma System Oversight & Management Committee. A sub committee of the Governors EMS Advisory Board. This is the Commonwealth's trauma stakeholders committee that work to develop, maintain and improve Virginia's trauma system.

VDH
Virginia Department of Health.

verification, trauma center
Is the process of reviewing Virginia designated trauma centers to assure they are maintaining compliance with the Virginia Trauma Center Criteria.

Virginia Statewide Trauma Registry (VSTR)
In Virginia all hospitals that provide emergency services and have inpatient facilities are required by the *Code of Virginia* §32.1-116.1 to report to the VSTR. The VSTR is used by Virginia's trauma system for performance improvement, research, injury prevention, resource utilization and the creation of state standards and benchmarks.